ORDER NO.AD0305101C8

Service Manual

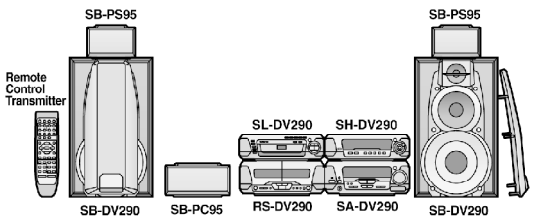
DVD/Video CD/CD changer

SL-DV290EE / SL-DV290GN

Colour
(s).....Silver Type
System:SC-DV290

Because of unique interconnecting cables, when a component requires service, send or bring in the entire system.

Note: Refer to the service manual for Model No.SA-DV290EE/GN (ORDER NO.AD0305100C8) for information on “ACCESSORIES” and “PACKAGING”.



SPECIFICATIONS

Specification

■ **Discs played (8 cm or 12 cm)**

DVD-Video/DVD-Audio
DVD-RAM/R (DVD-Video format discs)
Video CD, CD (CD-DA)
MP3/WMA/JPEG format discs)

■ **Audio**

No. of channels 5.1 channel (FL, FR, SL, SR, C, SW)

■ **Video**

Signal system	**PAL 625/50, PAL 525/60, NTSC**
Output level	
Composite video	**1 Vp-p (75 Ω)**
S-video Y	**1 Vp-p (75 Ω)**
S-video C	**0.300 Vp-p (75 Ω) PAL**
	0.286 Vp-p (75 Ω) NTSC

■ **Pickup**

Beam source	**Semiconductor laser**
Wavelength	**658/790 nm**

■ **General**

Dimensions (W×H×D)	**293×89×288 mm**
Mass	**2.5 kg**
Power Supply:	**DC10V**
Power Consumption:	**12W**

Nots
1.Design and specifications are subject to change without notice.
2.Dimensions and weight are approximate.
3.Total harmonic distortion is measured by the digital spectrum analyzer.

■ **System/SC-DV290**

Sound processor: SH-DV290, DVD/ Video CD/ CD changer: SL-DV290, Tuner/ Amplifier: SA-DV290 , Cassette Deck: RS-DV290, Speakers: Front* (SB-DV290),Center* (SB-PC95),Surround* (SB-PS95) (*Madein MESA.)

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Technics

1. Before Repair

This equipment (SL-DV290),which is the component of this system, is supplied with power from the tuner/amplifier (SA-DV290) through the sound processor (SH-DV290). When repairing this equipment or checking operation of the system, be suretoconnectthe tuner/amplifier and sound

processor with it.
This equipment, even in the state of it as a single equipment, permits power supply and operation check. When operating it as a single equipment without the tuner/amplifierand sound processor, refer to the paragraph of "Measurements and Adjustments.

2. Precaution of Laser Diode

CAUTION:

This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pickup lens.
Wave length:658/790 nm
Maximum output radiation power from pickup: 100 μ W/VDE
Laser radiation from the pickup lens is safety level,but be sure the followings:

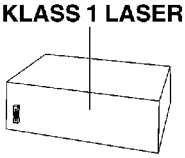
1. Do not disassemble the optical pickup unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pickup lens for a long time.

ACHTUNG:

Dieses Produkt enthält eine Laserdiode.
Im eingeschalteten Zustand wird unsichtbare Leserstrahlung von der Laserinheit adgestrahit.
Wellenlänge: 658/790 nm
Maximale Strahlungsleistung der Lasereinheit: 100 μ W/VDE
Die Strahlungan der Lasereinheit ungefährlich, wenn folgende Punkte beachtet werden:

1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdiode gefährlich ist.
2. Den werkseitig justierten Einstellregler der Lasereinhit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlines blicken.
4. Nicht über längere Zeit in die Fokussierlines blicken.

LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT



DVD/Video CD/CD Changer
(Back of product)

DANGER - VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM. (FDA 21 CFR)
CAUTION - VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM. (IEC60825-1)
ATTENTION - RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU.
ADVARSEL - SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO! - AVATTAESSA OLET ALTTIINA NÄKYVÄÄ JA NÄKYMÄTÖN LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING - SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. BETRAKTA EJ STRÅLEN.
ADVARSEL - SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. UNNGÅ EKSPONERING FOR STRÅLEN.
VORSICHT - SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.
注 意 - 打开时有可见及不可见激光辐射。避免激光束照射。
注 意 - ここを開くと可視及び不可視のレーザー光が出ます。ビーム照射を避けて、照射にさらされないでください。
RQL50233

(Inside of product)

LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT

CAUTION!
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

3. Operating Instructions

4. Handling Precautions for Traverse Deck

The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by static electricity of clothes or human body.So, be careful of electrostatic breakdown during repair of the traverse deck (optical pickup).

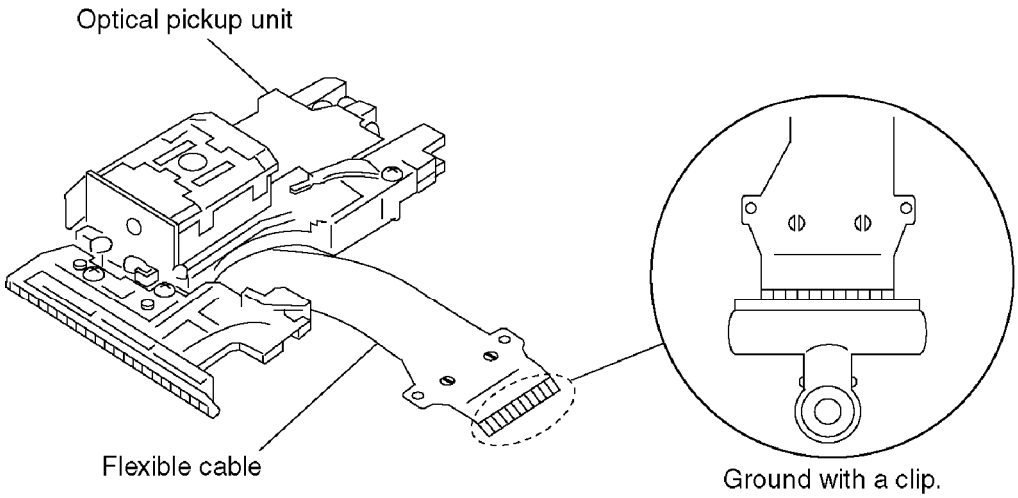
4.1. Handling of traverse deck (optical pickup)

1. **Do not give considerable shock to the traverse unit (optical pickup) as it has an extremely high-precise structure.**
2. **When replacing the optical pickup, install the flexible cable and cut its short land with a nipper. See the optical pickup replacement procedure in this Technical Guide. Before replacing the traverse unit, remove the short pin for preventingstaticelectricity andinstall**

a new unit. Connect the connector as short time as possible.

3. The flexible cable may be cut off if an excessive force is applied to it. Use caution when handling the cable.
4. The half-fixed resistor for laser power adjustment cannot be adjusted. Do not turn the resistor.

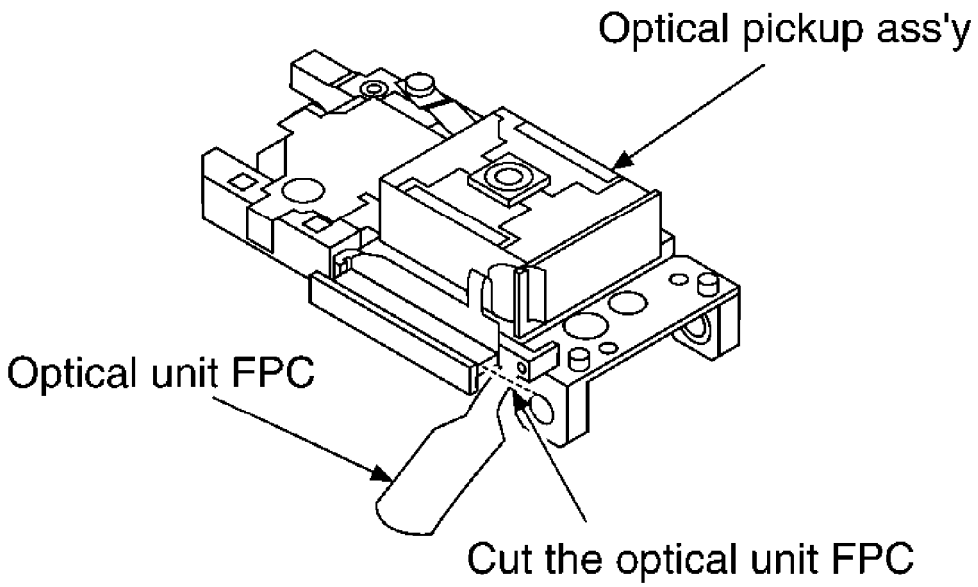
Fig. 1



4.2. Replacement procedure for the optical pickup

1. Connect the Flexible cable to the connector on the terminal P.C.B..
2. Cut the optical unit FPC at the point shown below. (As shown in Fig. 2.)

Fig. 2



4.3. Grounding for electrostatic breakdown prevention

1. Human body grounding

Use the anti-static wrist strap to discharge the static electricity from your body. (As shown in Fig. 3 .)

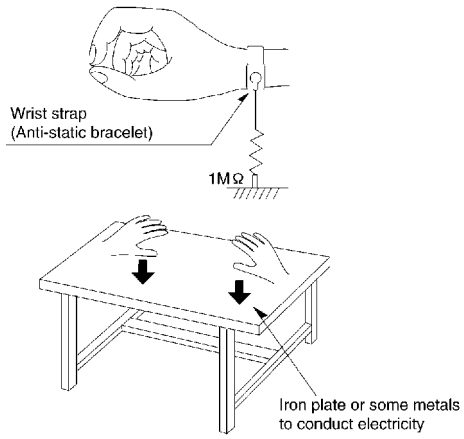
2. Work table grounding

Put a conductive material (sheet) or steel sheet on the area where the optical pickup is placed, and ground the sheet.

Caution:

The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).

Fig. 3



5. Operation Checks and Component Replacement Procedures

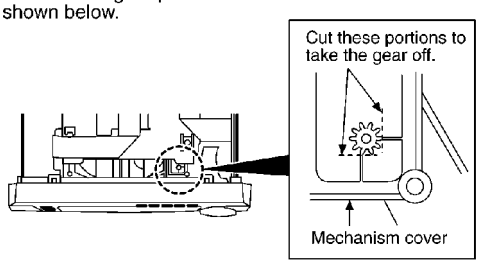
- This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.

- For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.

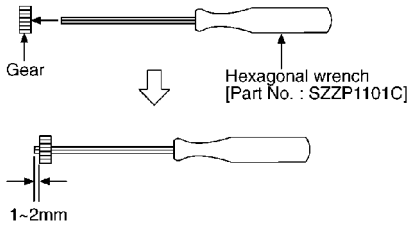
Gear for servicing (as jig) information

1. This unit has a gear which used for checking items (Open/close of disc tray, up/down operation of traverse unit by manually) when servicing. (For gear information, that is described on the items for disassembly procedures.)
2. For preparation of gear (for servicing), perform the procedures as follows.
3. In case of re-servicing the same set, the "gear for servicing" may be took off because it had been used. So, the "gear for servicing" must be stored.

1. Remove the gear provided with mechanism cover as shown below.

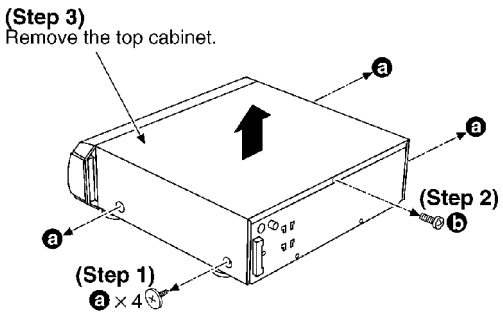


2. Insert the hexagonal wrench (2mm) into the gear, and then project the tip of wrench for 1~2mm length.

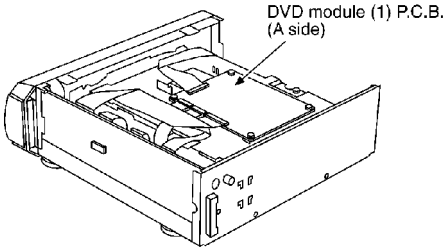


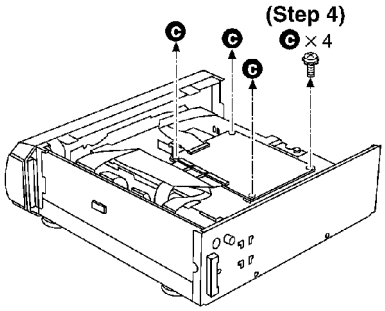
(Preparation of gear as jig is completed.)

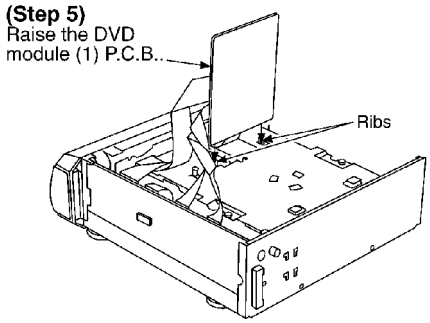
5.1. Checking for the DVD module (1) P.C.B.



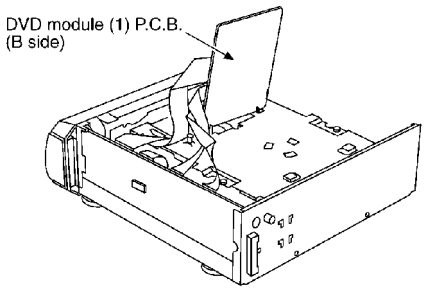
- Check the DVD module (1) P.C.B. (A side) as shown below.





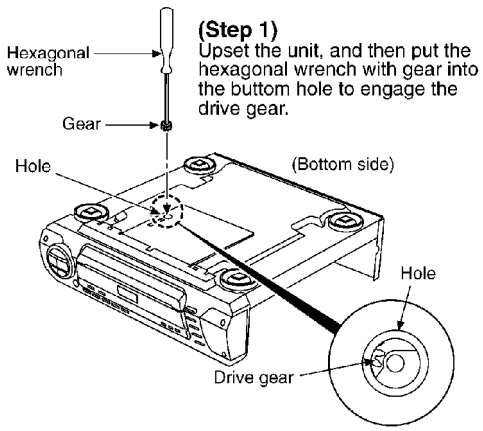


- Check the DVD module (1) P.C.B. (B side) as shown below.

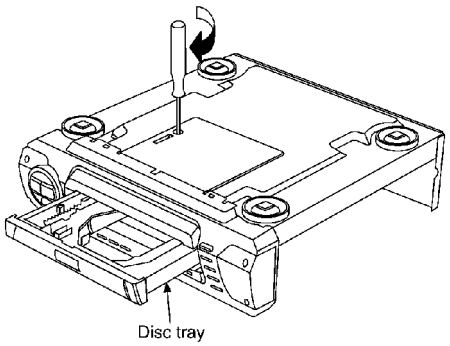


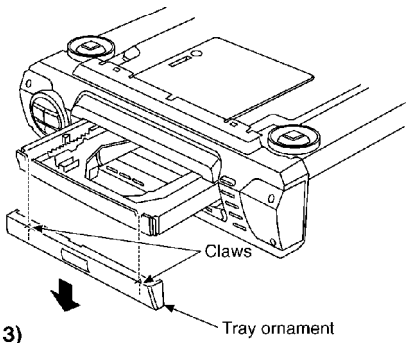
5.2. Checking for the operation P.C.B.

- Follow the (Step 1) - (Step 3) of item 5.1.

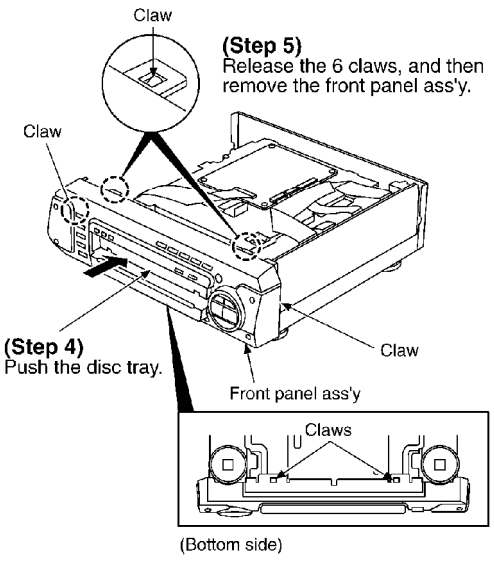


(Step 2)
Rotate the hexagonal wrench with gear in direction of arrow, and then open the disc tray.





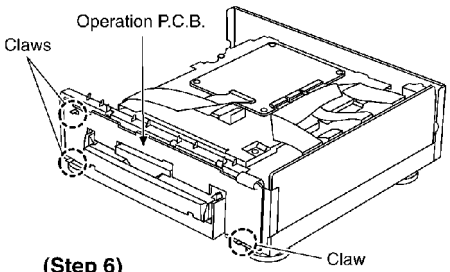
(Step 3)
Release the 2 claws, and then remove the tray ornament.



(Step 5)
Release the 6 claws, and then remove the front panel ass'y.

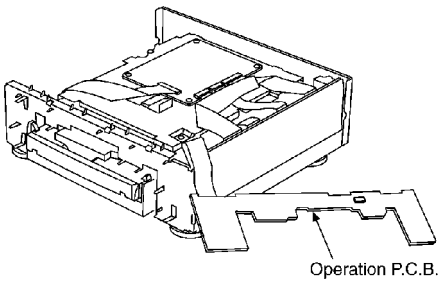
(Step 4)
Push the disc tray.

(Bottom side)



(Step 6)
Release the 3 claws, and then remove the operation P.C.B..

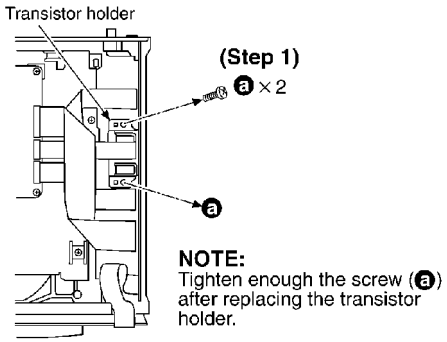
- Check the operation P.C.B. as shown below.

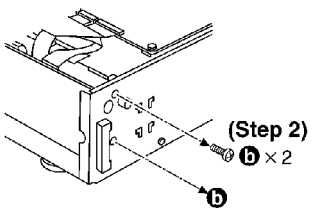


5.3. Checking for the main P.C.B.

- Follow the (Step 1) - (Step 3) of item 5.1.

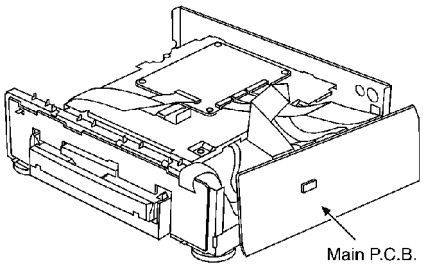
- Follow the (Step 1) - (Step 5) of item 5.2.





- Check the main P.C.B. as shown below.

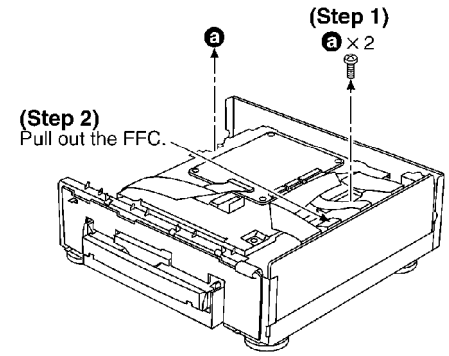
(Step 3)
Remove the main P.C.B., and then place it on the side of unit.



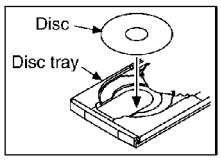
5.4. Checking for the DVD module (2) P.C.B.

- Follow the (Step 1) - (Step 3) of item 5.1.

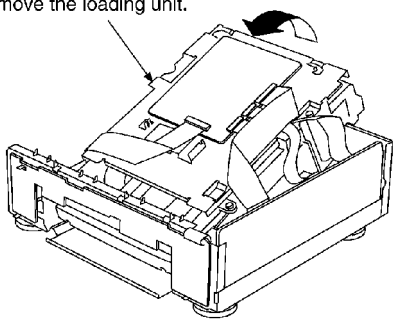
- Follow the (Step 1) - (Step 5) of item 5.2.



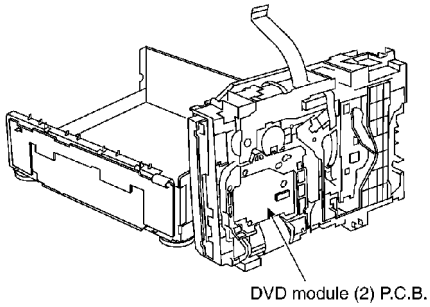
NOTE:
Put in the disc to disc tray.



(Step 3)
Remove the loading unit.



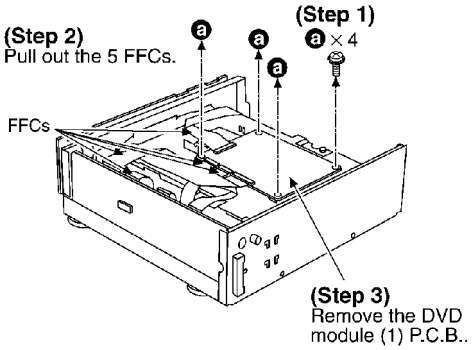
- Check the DVD module (2) P.C.B. as shown below.

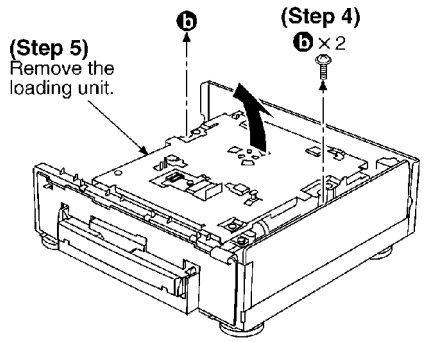


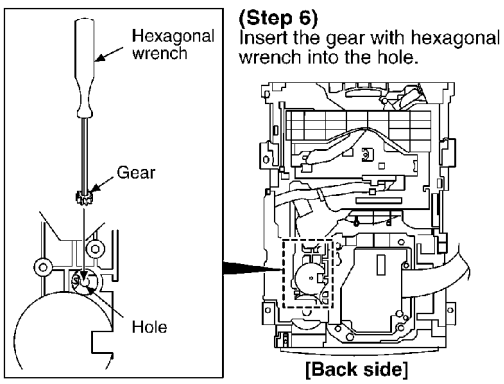
5.5. Replacement for the traverse unit

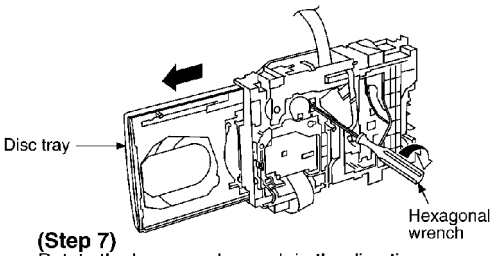
- Follow the (Step 1) - (Step 3) of item 5.1.

- Follow the (Step 1) - (Step 5) of item 5.2.



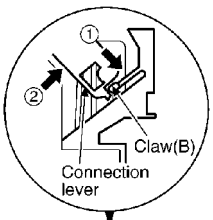




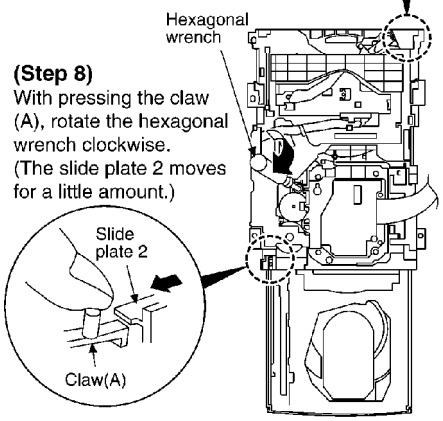


(Step 7)
Rotate the hexagonal wrench in the direction of arrow, and then open the disc tray fully.

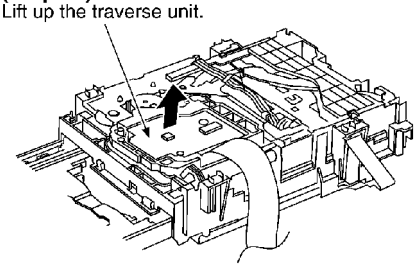
(Step 9)
Pressing the claw (B) in the direction of arrow①, the connection lever moves in the direction of arrow②.

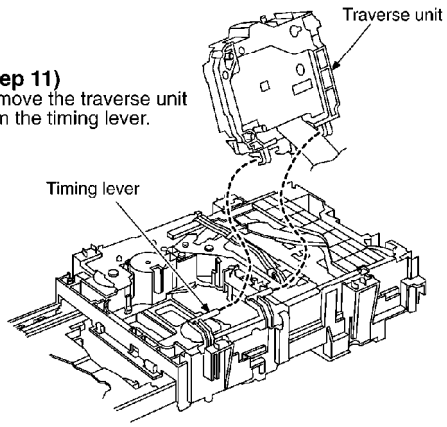


(Step 8)
With pressing the claw (A), rotate the hexagonal wrench clockwise.
(The slide plate 2 moves for a little amount.)



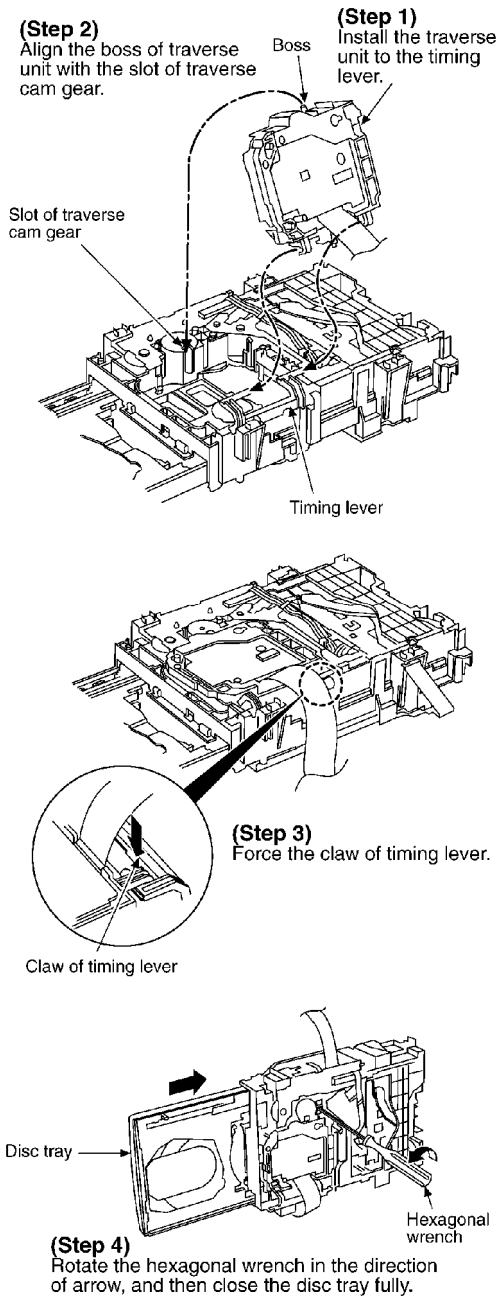
(Step 10)
Lift up the traverse unit.

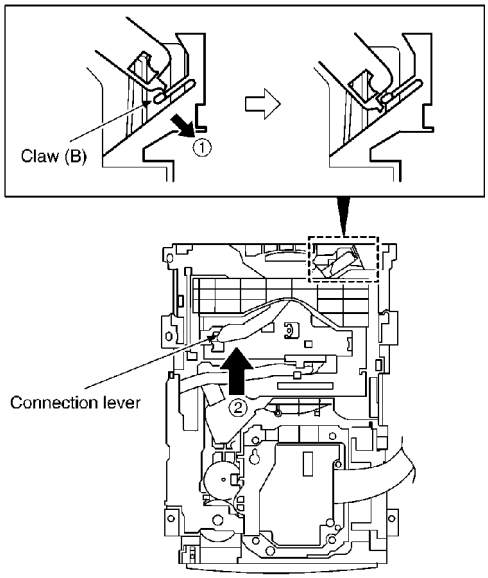




(Step 11)
Remove the traverse unit from the timing lever.

Installation for traverse unit


(Step 2)
Align the boss of traverse unit with the slot of traverse cam gear.
Boss
(Step 1)
Install the traverse unit to the timing lever.
Slot of traverse cam gear
Timing lever
(Step 3)
Force the claw of timing lever.
Claw of timing lever
Disc tray
Hexagonal wrench
(Step 4)
Rotate the hexagonal wrench in the direction of arrow, and then close the disc tray fully.

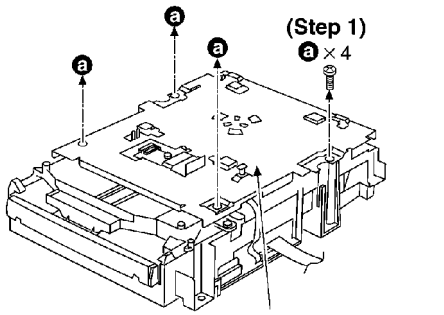


(Step 5)
With pressing the claw (B) in the direction of arrow ①, force the connection lever in the direction of arrow ②.

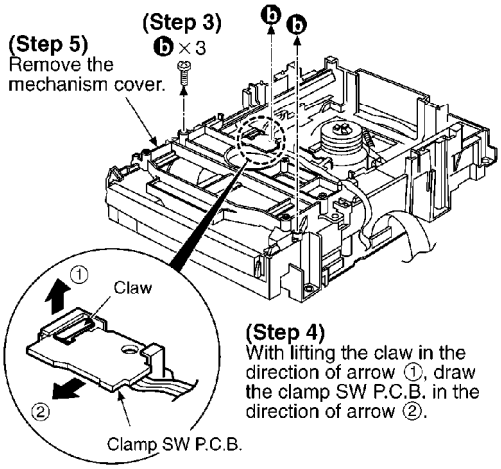
5.6. Replacement for the disc tray

- Follow the (Step 1) - (Step 3) of item 5.1.

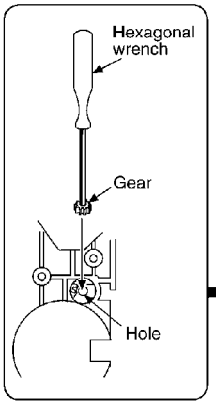
- Follow the (Step 1) - (Step 5) of item 5.5.



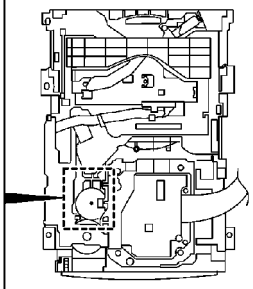
(Step 2)
Remove the upper plate.



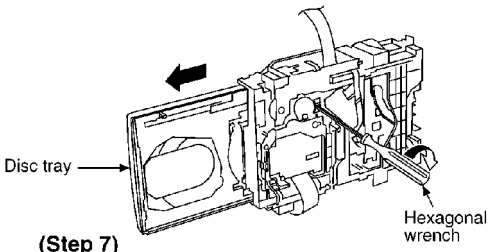
(Step 4)
With lifting the claw in the direction of arrow ①, draw the clamp SW P.C.B. in the direction of arrow ②.



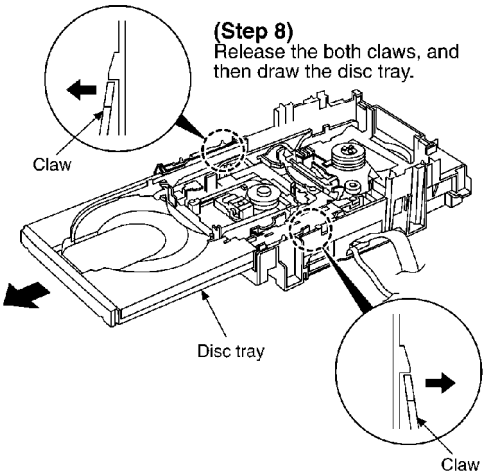
(Step 6)
Insert the gear with hexagonal wrench into the hole.



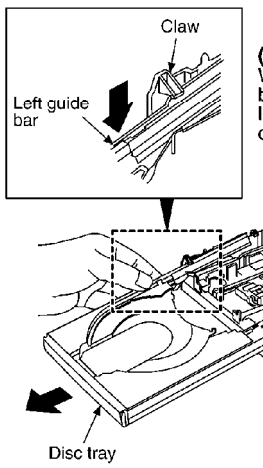
(Back side)



(Step 7)
Rotate the hexagonal wrench in the direction of arrow, and then open the disc tray fully.



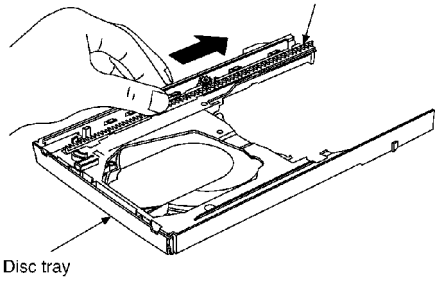
(Step 8)
Release the both claws, and then draw the disc tray.

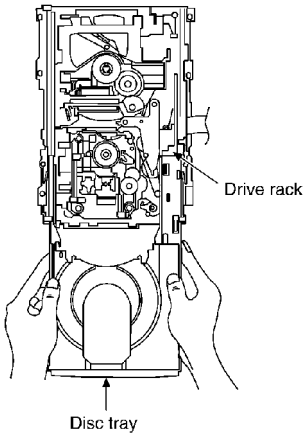


(Step 9)
With forcing the left guide bar manually because the left guide bar interfers with claw, draw the disc tray.

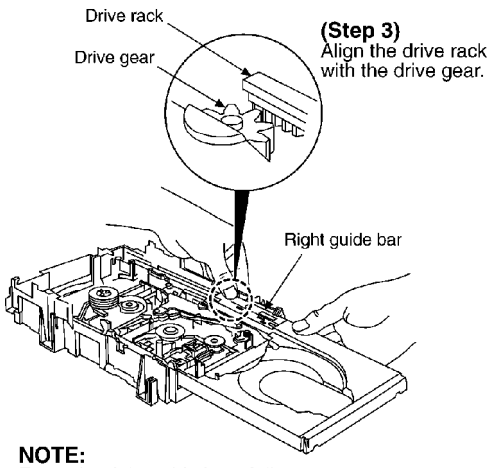
Installation of the disc tray after replacement

(Step 1)
Slide the drive rack fully in the direction of arrow.





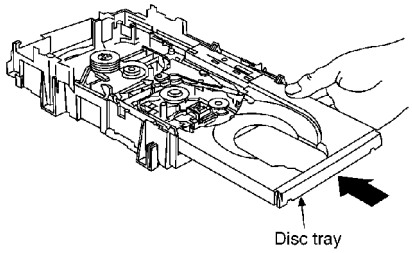
(Step 2)
Holding the drive rack not to move, install the disc tray.



(Step 3)
Align the drive rack with the drive gear.

NOTE:
Force the right guide bar of disc tray manually not to move upwards.

(Step 4)
Holding the disc tray manually, push the disc tray in the direction of arrow.

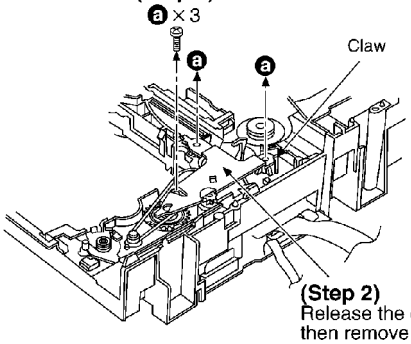


5.7. Disassembly and reassembly for mechanism base drive unit

Disassembly for mechanism base drive unit

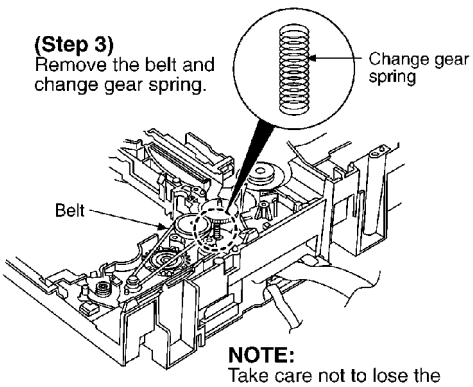
- Follow the (Step 1) - (Step 3) of item 5.1.
- Follow the (Step 1) - (Step 11) of item 5.5.
- Follow the (Step 1) - (Step 9) of item 5.6.

(Step 1)
ⓐ × 3



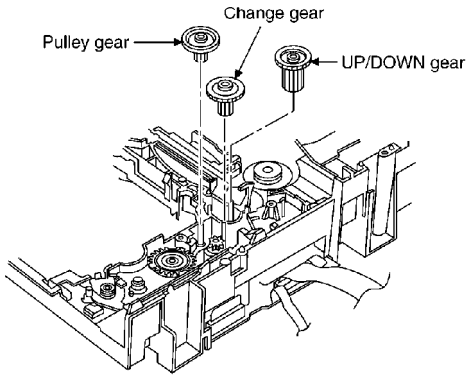
(Step 2)
Release the claw, and then remove the gear holder.

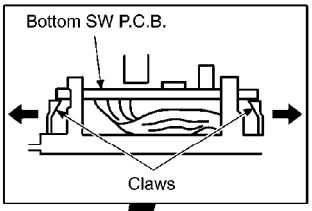
(Step 3)
Remove the belt and change gear spring.



NOTE:
Take care not to lose the change gear spring.

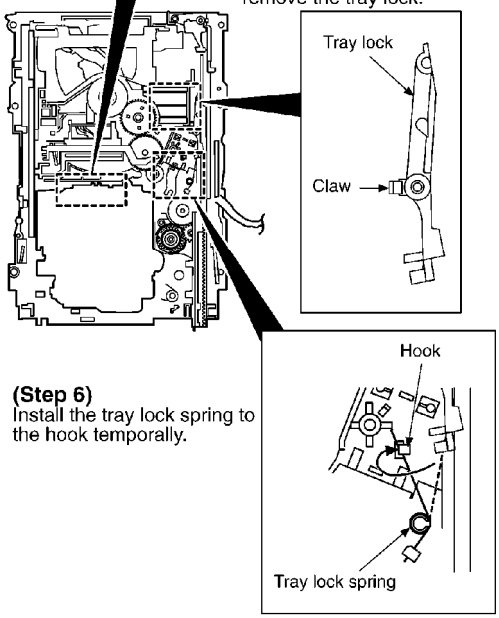
(Step 4)
Remove the pulley gear, change gear and UP/DOWN gear.





(Step 5)
Release the 2 claws, and then remove the bottom SW P.C.B..

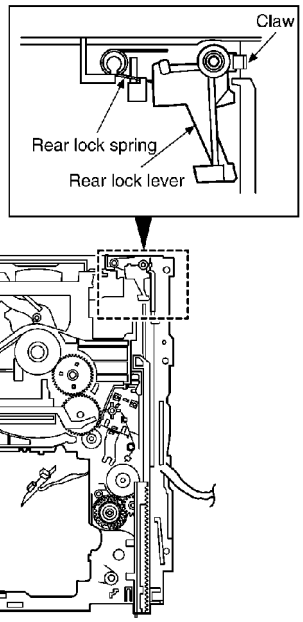
(Step 7)
Release the claw, and then remove the tray lock.



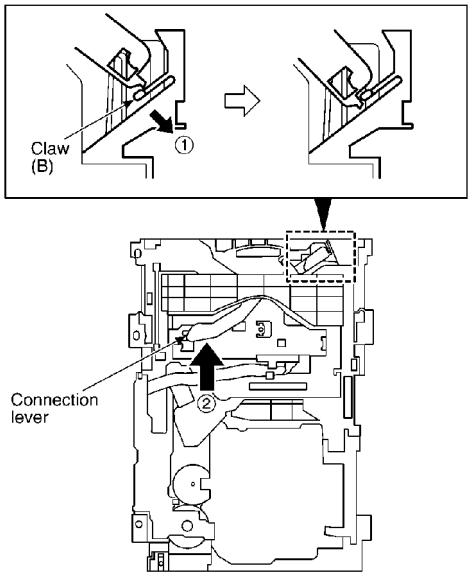
(Step 6)
Install the tray lock spring to the hook temporally.

(Step 8)
Release the claw, and then remove the rear lock lever.

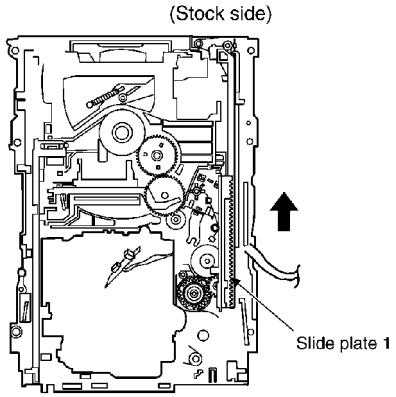
NOTE:
Take care not take the rear lock spring off.



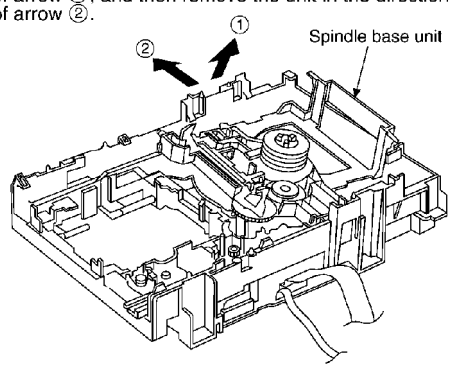
(Step 9)
Pressing the claw (B) in the direction of arrow ①, force the connection lever in the direction of arrow ②.

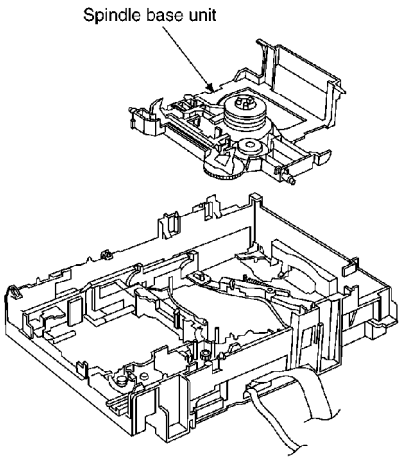


(Step 10)
Move the slide plate 1 to the end of stock side.

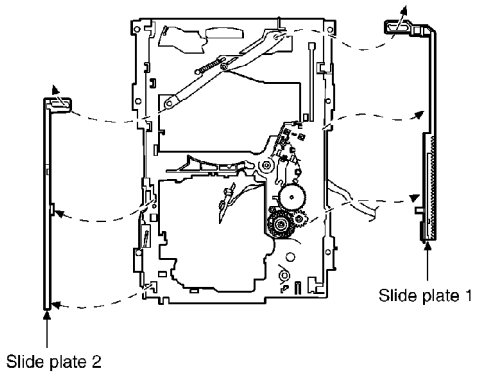


(Step 11)
Lift up the left end of spindle base unit in the direction of arrow ①, and then remove the unit in the direction of arrow ②.

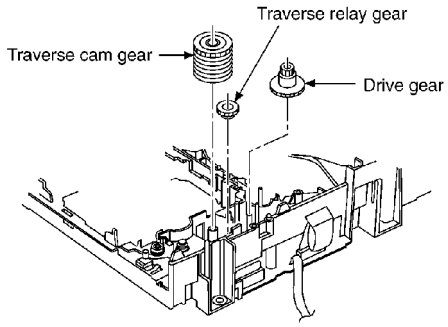




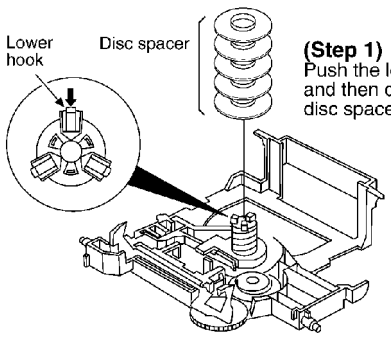
(Step 12)
Remove the slide plate 1 and slide plate 2.



(Step 13)
Remove the traverse relay gear, traverse cam gear and drive gear.

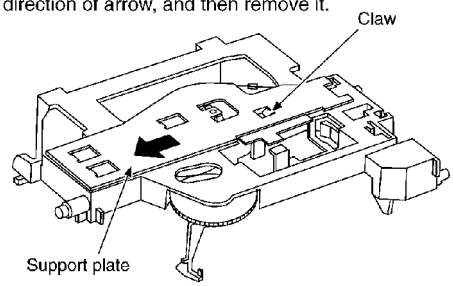


Diassembly/reassembly for the spindle base unit

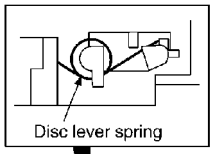


(Step 1)
Push the lower hook, and then draw the 5 disc spacers.

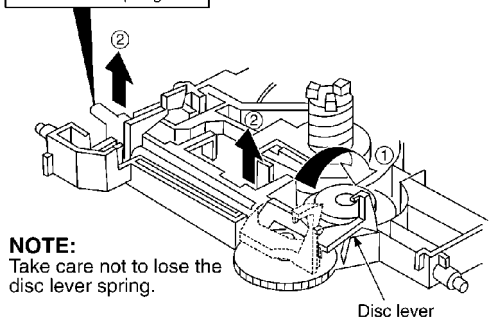
(Step 2)
Pushing the claw, slide the support plate in the direction of arrow, and then remove it.



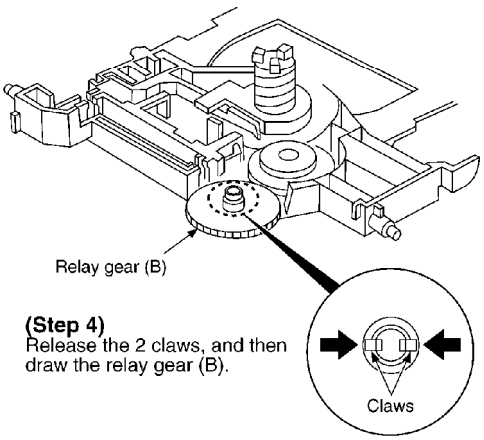
(Installation for disc lever spring)



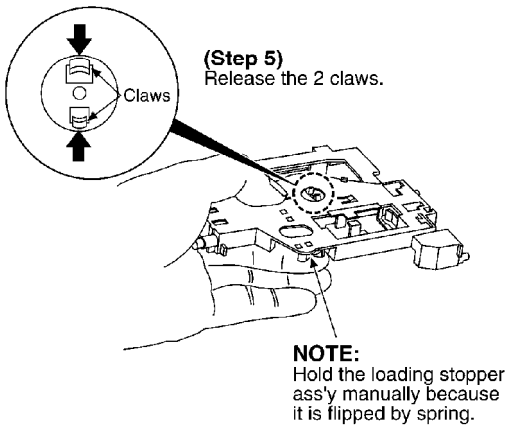
(Step 3)
Rotate the disc lever in the direction of arrow ①, draw the disc lever.



NOTE:
Take care not to lose the disc lever spring.

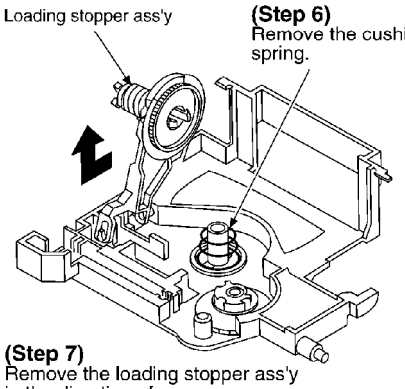


(Step 4)
Release the 2 claws, and then draw the relay gear (B).



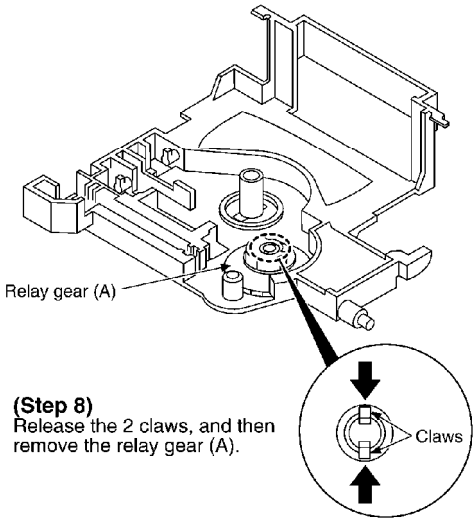
(Step 5)
Release the 2 claws.

NOTE:
Hold the loading stopper ass'y manually because it is flipped by spring.



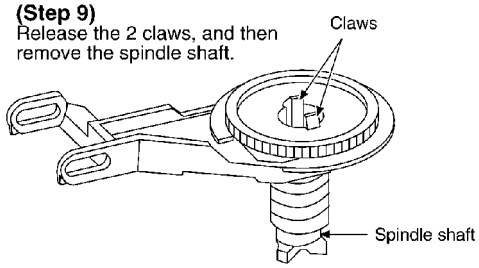
(Step 6)
Remove the cushion spring.

(Step 7)
Remove the loading stopper ass'y in the direction of arrow.

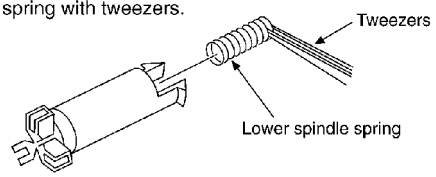


(Step 8)
Release the 2 claws, and then remove the relay gear (A).

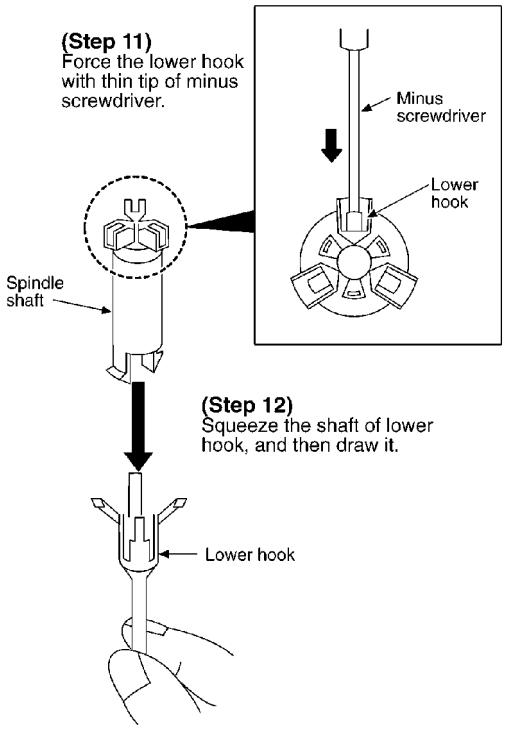
(Step 9)
Release the 2 claws, and then remove the spindle shaft.



(Step 10)
Remove the lower spindle spring with tweezers.

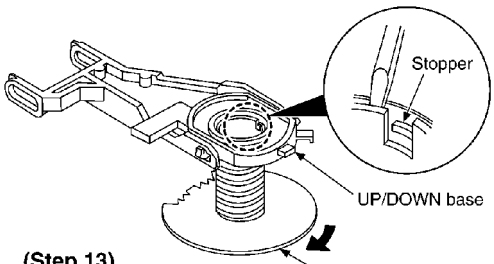


(Step 11)
Force the lower hook with thin tip of minus screwdriver.

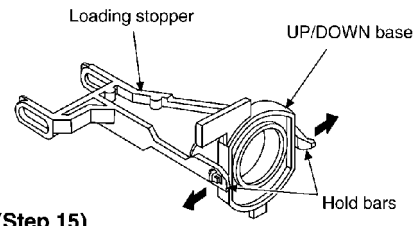


(Step 12)
Squeeze the shaft of lower hook, and then draw it.

(Step 14)
Insert the thin tip of minus screwdriver between the lower spindle and UP/DOWN base, and then slacken the lower spindle to release the stopper.
Then, rotate the lower spindle and remove it.



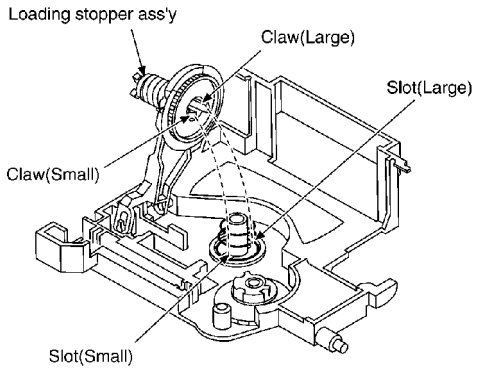
(Step 13)
Rotate the lower spindle in the direction of arrow until the lower spindle interferes with stopper.



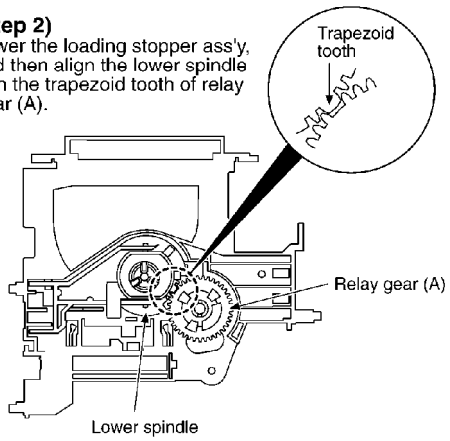
(Step 15)
Rotate the UP/DOWN base at a 90 degree angle.
Then, spread the hold bars of loading stopper and remove the UP/DOWN base.

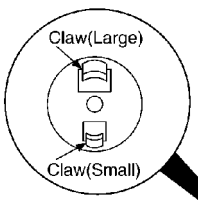
Installation for loading stopper ass'y

(Step 1)
Align the claw of loading stopper ass'y with the slot of spindle base. (Caution should be exercised when alignment of claw due to the size of claws.)

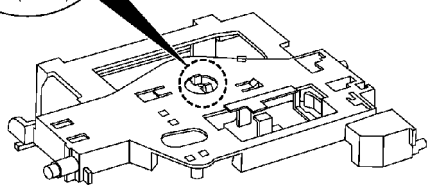


(Step 2)
Lower the loading stopper ass'y, and then align the lower spindle with the trapezoid tooth of relay gear (A).

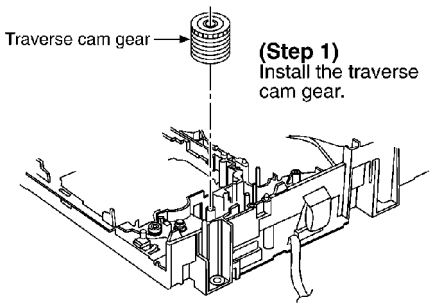




(Step 3)
Force the loading stopper ass'y, latch the claw firmly.

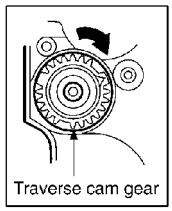


Reassembling for mechanism base drive unit

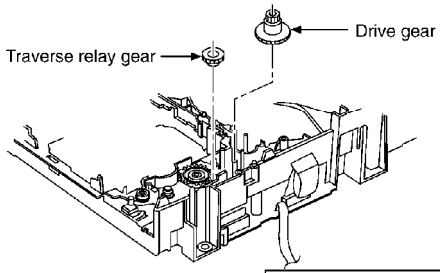


(Step 1)
Install the traverse cam gear.

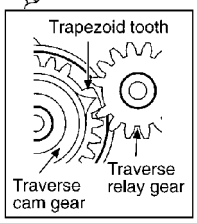
(Step 2)
Rotate the traverse cam gear to the direction of arrow.

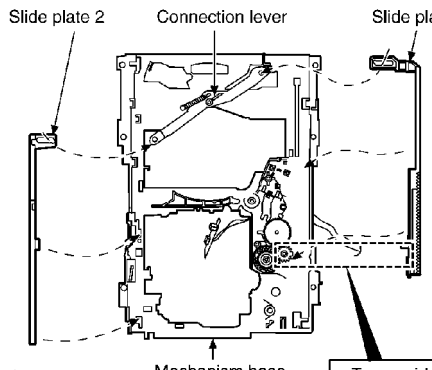


(Step 3)
Install the drive gear and traverse relay gear.



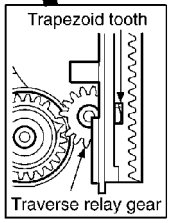
※ When installing the traverse relay gear, align the trapezoid tooth of gear with tooth of traverse cam gear.

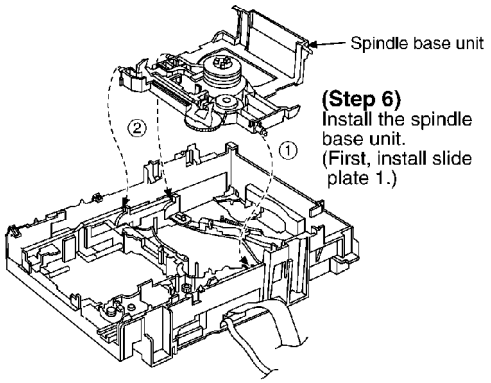




(Step 4)
Install the slide plate 2 to the mechanism base, and then match to the connection lever.

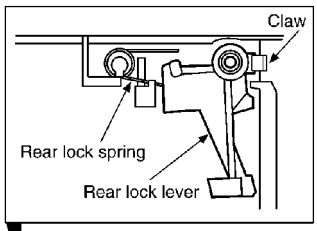
(Step 5)
Install the slide plate 1 to the mechanism base, and then match to the connection lever and align the trapezoid tooth of traverse relay gear with the slide plate 1.

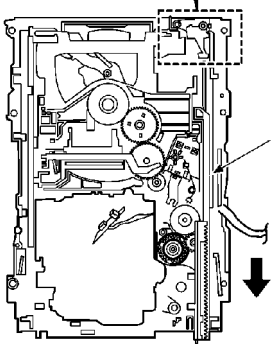




(Step 6)
Install the spindle base unit.
(First, install slide plate 1.)

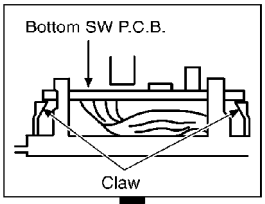
(Step 8)
Install the rear lock lever.
(The claw should be latched.)





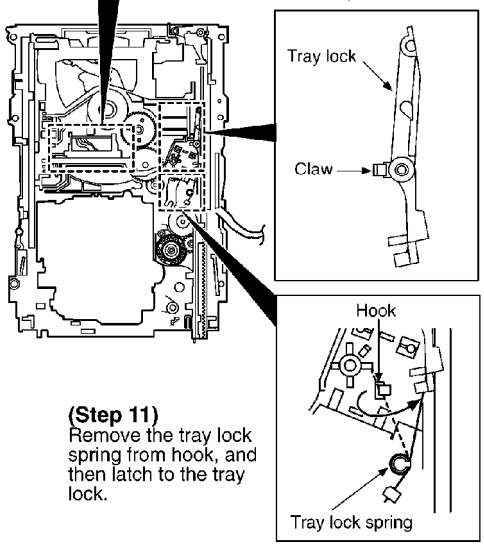
(Step 7)
Move the slide plate **1** to forward fully.

(Front side)



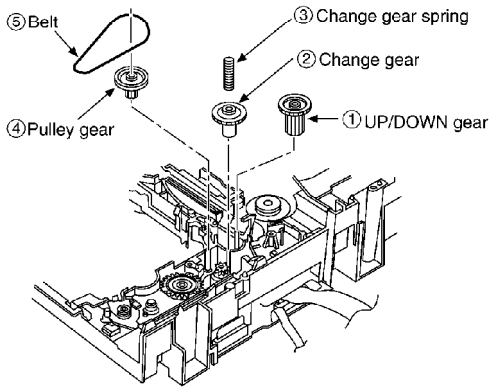
(Step 9)
Install the bottom SW P.C.B..
(The claw should be latched.)

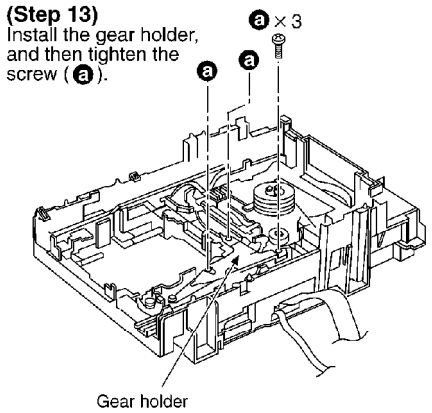
(Step 10)
Install the tray lock.
(The claw should be latched.)



(Step 11)
Remove the tray lock spring from hook, and then latch to the tray lock.

(Step 12)
Install the UP/DOWN gear, change gear, change gear spring, pulley gear and belt in the order of ①-⑤ .



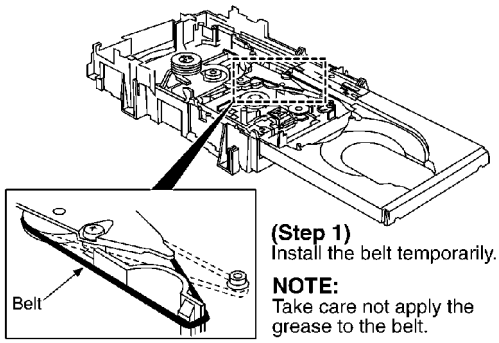


(Step 14)
Install the tray base, traverse ass'y, mechanism cover and upper plate.
(Refer to the items 5.5. and 5.6. of Main Component Replacement Procedures.)

[Operation check after servicing]
Check the proper operation of following items with gear and hexagonal screwdriver.
1) Open/close of disc tray.
2) Moving the disc tray to the stock side.
3) UP/DOWN operation of spindle base unit.
4) UP/DOWN operation of traverse ass'y.

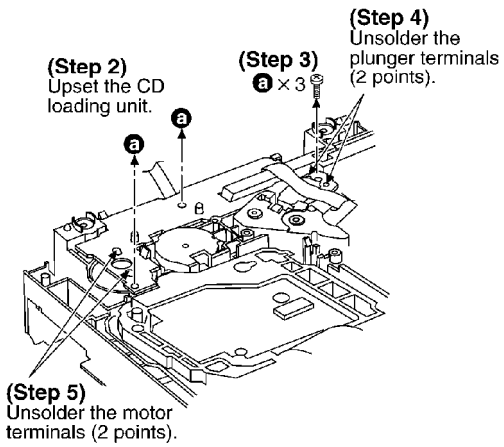
5.8. Replacement for the motor ass'y

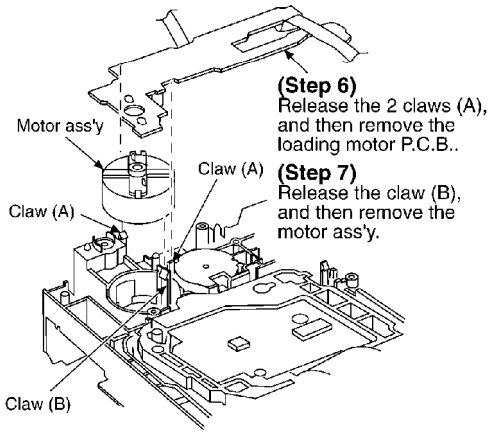
- Follow the (Step 1) - (Step 3) of item 5.1.
- Follow the (Step 1) - (Step 5) of item 5.5.
- Follow the (Step 1) - (Step 7) of item 5.6.



(Step 1)
Install the belt temporarily.

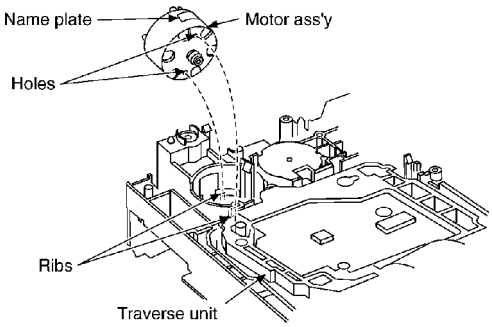
NOTE:
Take care not apply the grease to the belt.




Motor ass'y
Claw (A)
Claw (A)
Claw (B)
(Step 6)
Release the 2 claws (A), and then remove the loading motor P.C.B..
(Step 7)
Release the claw (B), and then remove the motor ass'y.

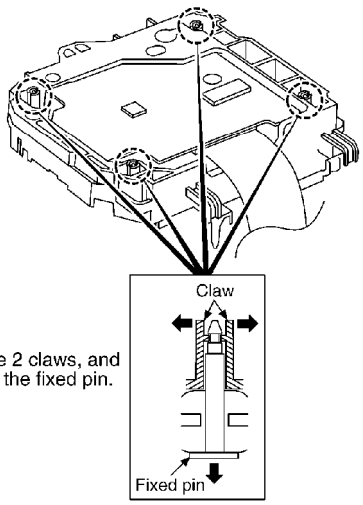
Notice for motor ass'y installation

1. Locate the name plate of motor to the traverse ass'y.
2. Align the hole of motor with the ribs.



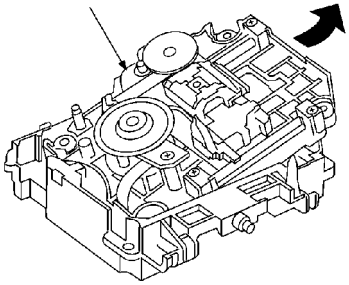
5.9. Replacement for the optical pick-up

- Follow the (Step 1) - (Step 3) of item 5.1.
- Follow the (Step 1) - (Step 5) of item 5.2.
- Follow the (Step 1) - (Step 11) of item 5.5.

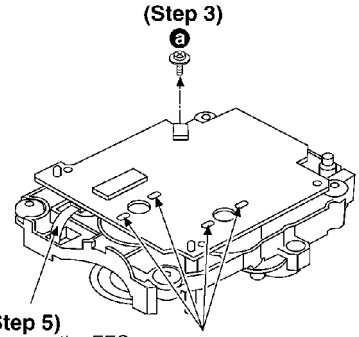


(Step 1)
Release the 2 claws, and the pull out the fixed pin.

(Step 2)
Remove the traverse deck unit.



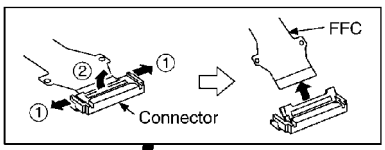
(Step 3)

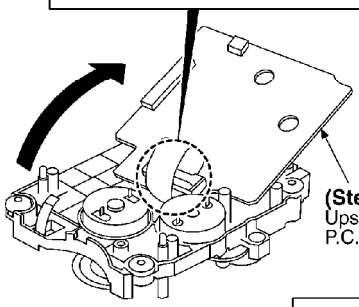


(Step 5)
Remove the FFC.

(Step 4)
Unsolder the motor terminals.

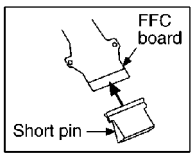
(Step 7)
Pull out the FFC from connector.

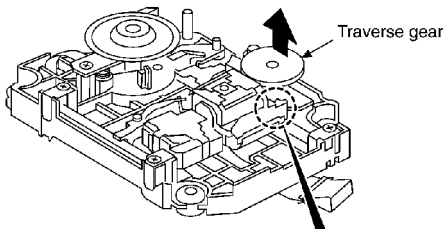




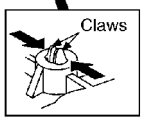
(Step 6)
Upset the terminal P.C.B..

Caution:
Insert short pin into the traverse unit FFC board.
(Refer to **"Handling Precautions for Traverse Deck"**.)



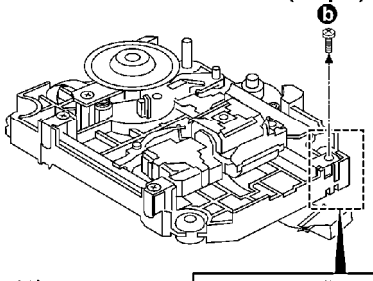


(Step 8)
Release the claws, and then pull out the traverse gear.

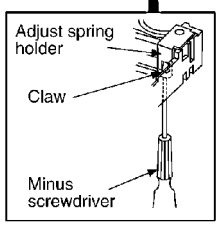


(Bottom side)

(Step 9)

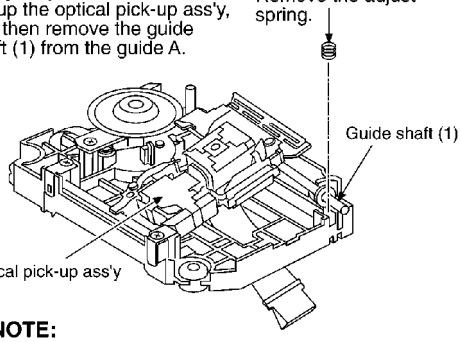


(Step 10)
Release the claw, and then remove the adjust spring holder.

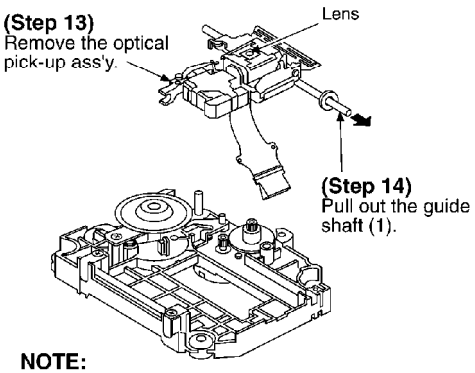


(Step 12)
Lift up the optical pick-up ass'y, and then remove the guide shaft (1) from the guide A.

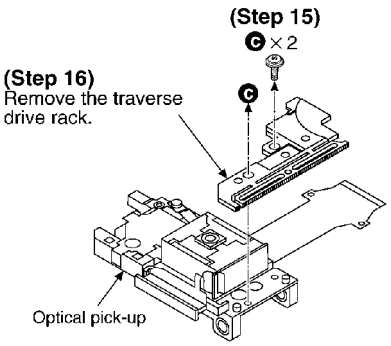
(Step 11)
Remove the adjust spring.



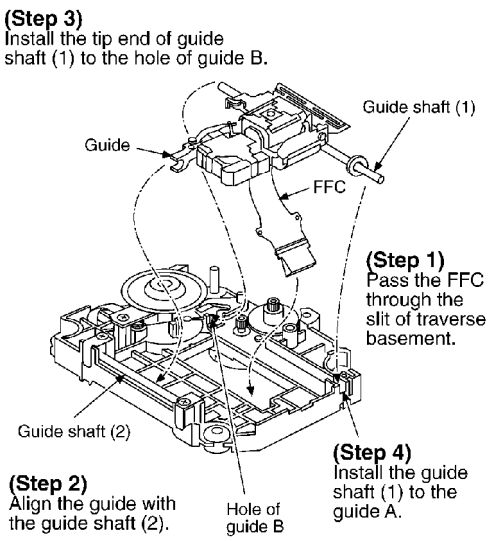
NOTE:
Take care not to lose the adjust spring.



NOTE:
1. Use care to prevent damage the optical pick-up, due to the precision construction.
2. Do not tough the lens of the optical pick-up.



Installing the optical pick-up


(Step 3)
Install the tip end of guide shaft (1) to the hole of guide B.
Guide shaft (1)
Guide
FFC
(Step 1)
Pass the FFC through the slit of traverse basement.
Guide shaft (2)
(Step 4)
Install the guide shaft (1) to the guide A.
(Step 2)
Align the guide with the guide shaft (2).
Hole of guide B

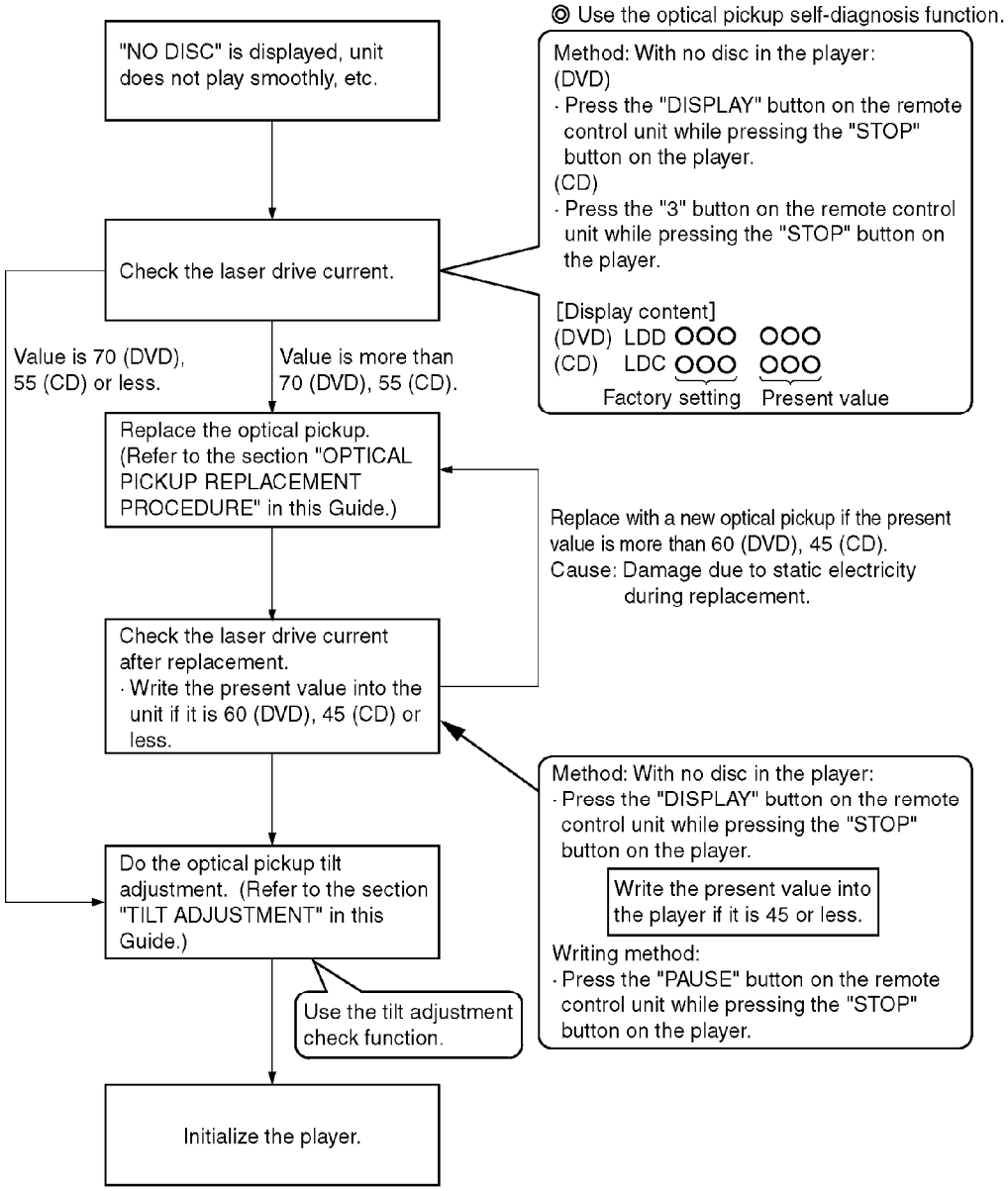
6. Optical Pickup Self-Diagnosis and Replacement Procedure

6.1. Self-diagnosis

The optical pickup self-diagnosis function and tilt adjustment check function have been included in this unit. When repairing, use the following procedure for effective Self-diagnosis and tilt

adjustment.Be sure to use the self-diagnosis functionbeforereplacingthe optical pickup when "NO DISC" is displayed. As a guideline, you should replace the optical pickup when the value of the laser drive current is more than 55.

Note:
Press the power button to turn on the power, and check the value within three minutes before the unit warms up. (Otherwise, the result will be incorrect.)


◎ Use the optical pickup self-diagnosis function.
"NO DISC" is displayed, unit does not play smoothly, etc.
Method: With no disc in the player:
(DVD)
· Press the "DISPLAY" button on the remote control unit while pressing the "STOP" button on the player.
(CD)
· Press the "3" button on the remote control unit while pressing the "STOP" button on the player.
[Display content]
(DVD) LDD OOO OOO
(CD) LDC OOO OOO
Factory setting Present value
Check the laser drive current.
Value is 70 (DVD), 55 (CD) or less.
Value is more than 70 (DVD), 55 (CD).
Replace the optical pickup. (Refer to the section "OPTICAL PICKUP REPLACEMENT PROCEDURE" in this Guide.)
Replace with a new optical pickup if the present value is more than 60 (DVD), 45 (CD).
Cause: Damage due to static electricity during replacement.
Check the laser drive current after replacement.
· Write the present value into the unit if it is 60 (DVD), 45 (CD) or less.
Method: With no disc in the player:
· Press the "DISPLAY" button on the remote control unit while pressing the "STOP" button on the player.
Write the present value into the player if it is 45 or less.
Writing method:
· Press the "PAUSE" button on the remote control unit while pressing the "STOP" button on the player.
Do the optical pickup tilt adjustment. (Refer to the section "TILT ADJUSTMENT" in this Guide.)
Use the tilt adjustment check function.
Initialize the player.

6.2. Cautions to Be Used Before Replacing the Optical Pickup Unit and Spindle Motor Assembly

Before replacing the optical pickup unit and spindle motor assembly, check the total using hours for each of them. The checking method is as follows:

	Operating state & Key operation	Display
Using hours of DVD and CD lasers	Press "STOP" button on the player, and " ▲ " on the remote control .	T1_xxxx_yyyy: total hours are displayed by 4-digit figures (unit: 10 hours).
Using hours of SP motor	Press "STOP" button on the player, and " ▶ " on the remote control.	T2_xxxx: total hours are displayed by 4-digit figures (unit: 10 hours).
Resetting using hours of DVD and CD lasers (Simultaneous resetting)	Press "STOP" button on the player, and " ▼ " on the remote control.	T1_0000_0000
Resetting using hours of the SP motor	Press "STOP" button on the player, and " ◀ " on the remote control .	T2_0000

Cautions to be taken when replacing the optical pickup
The optical pickup may break down due to the static electricity of human body. Take proper protection measures against static electricity before repairing the parts around the optical pickup.

1. Do not touch the areas around the laser diode and actuator.

2. Do not judge the laser diode with a tester. (The tester will be damaged easily.)

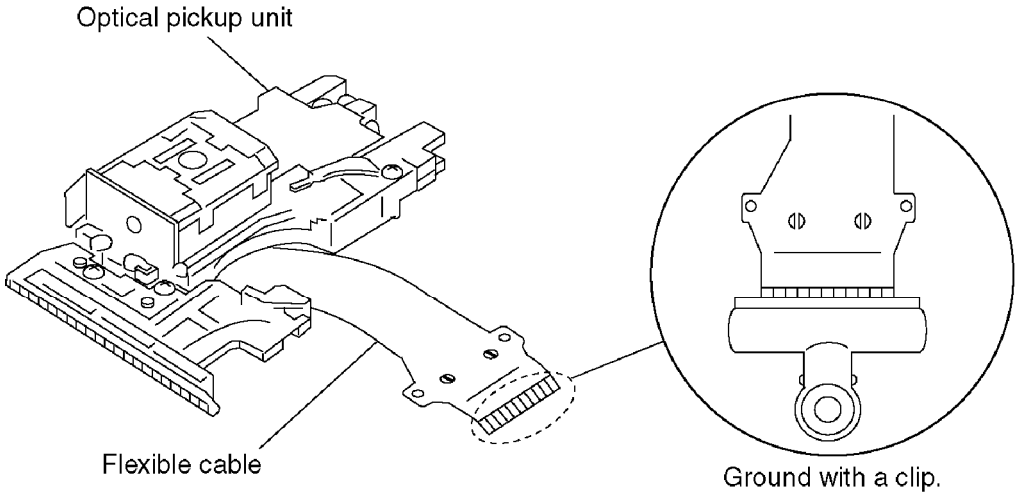
3. It is recommended to use a destaticized soldering iron for short-circuiting or removing the laser diode. (Recommended soldering iron) HAKKO ESD Product

4. Solder the land of the flexible cable in the optical pickup.

Note:

- When using a soldering iron which is not destaticized, short-circuit the terminal face of the flexible case with a clip. After that, short-circuit the land.

- After the repairing work is completed, remove the solder according to the correct procedure shown in this Technical Guide.



7. Self-Diagnosis Function and Service Modes

Each results of self-diagnostic function and service mode is displayed on the LCD of Tuner / Amplifier (SA-DV290). When using these function, confirm the unit to be connected by system cable.

7.1. Self-diagnostic function for loading mechanism

7.1.1. How to enter the mode and display

1. Turn on the power.
2. Press “SELECT” button on the Tuner / Amplifier (SA-DV290) to select DVD.
3. With no disc on the unit, hold down REPEAT button for at least 2 seconds, and then press ■(STOP) button for at least 2 seconds.
4. A loading mechanism error code is displayed if any. (No error is detected, “-- T-- ----- ” is displayed. - indicates a space.) Refer to Table 7-1. If there are multiple error, they canbesuccessivelyby pressing ▶▶ / ▶▶|(F-SKIP) button.

7.1.2. Canceling self-diagnostic function

- Press “Standby/on” button to turn off. And then press “Standby/on” button again to turn it on again.

7.1.3. Clearing self-diagnostic function

- After repairing, continue to press ■(STOP) button for at least 5 seconds in the situation of having displayed the error code. / (Clearing the contents of self-diagnostic function)
- Always be sure to clear memories after completing repair.

Table 7-1

Display code	Cause
H15	Disc tray open detect switch (S3) fault. / (Check and replace)
F16	Clamp switch (S4) fault. / (Check and replace)
F17	Bottom switch (S5) fault. / (Check and replace)
F27	Tray position detect switch (S1, S2) fault. / (Check and replace)
F28	Disc load error.
F29	Disc unload error.

7.2. Service mode table 1

Pressing various button combinations on the unit and remote control can activate the service modes.

Unit button	Remote control button	Application
■	0	Displaying the error code. (Refer to the item 7.3. “DVD/CD error display”.)
	5	Jitter check, optical pick-up tilt adjustment.
	6	Checking the region numbers and broadcast system.
	7	Checking the program version.
	DISPLAY	Checking DVD laser drive current measurement.
	3	Checking CD laser drive current measurement.
	▮▮	Writing the laser drive current value after replacing the optical p (Do not perform this mode except for replacing the optical pick-
	≧10	Initialization (Restore factory preset settings) / Perform this moc replacing the microcomputer, its peripheral parts and P.C.B..

7.3. DVD Self Diagnostic Function-Error Code

Error Code	Error Content	Additional error explanation	Defect 1	Defect 2	Defect 3
	U, H error				
U11	Focus error				
H01	Tray loading error				
H02	Spindle servo error	(Spindle servo, DSC SP motor, CLV servo error)			
H03	Traverse servo error				
H04	Tracking servo error				
H05	Seek error				
H06	Power error	Cannot switch off the power because of the panel and system computer communication error			
	DSC related				
F500	DSC error	DSC stops in the occurence of servo error (starup, focus error, etc)	OPU	ADSC	FEP
F501	DSC not Ready	DSC-system computer communication error (Communication failure caused by idling of DSC)	ADSC	CPU	
F502	DSC Time out error	Similar disposal as F500	OPU	ADSC	FEP
F503	DSC communication Failure	Communication error (result error occured although communication command was sent)	ADSC	FEP	EEPROM
F505	DSC Attention error	Similar disposal as F500	OPU	ADSC	FEP
F506	Invalid media	Disc is flipped over, TOC unreadable, incompatible disc	DISC	FEP	ADSC
	ODC related				
F600	Access failure to management information caused by demodulation error	Operation stopped because navigation data is not accessible caused by the demodulation defect	ODC	FEP	ADSC
F601	Indeterminate sector ID requested	Operation stopped caused by the request to access abnormal ID data	ODC	FEP	ADSC
F602	Access failure to LEAD-IN caused by demodulation error	LEAD IN data unreadable			

Error Code	Error Content	Additional error explanation	Defect 1	Defect 2	Defect 3
F603	Access failure to KEYDET caused by demodulation error	Access failure to CSS data of disc			
F610	ODC abnormality	No permission for command execution	ODC		
F611	6626 QCODE don't read Error	Access failure to seek address in CD series	ODC		
F612	No CRC OK for a specific time	Access failure to ID data in DVD series	ODC		
F630	No reply to KEY DET enquiry	(for internal use only)			
F631	CPPM KEY DET is not available till the FILE terminal	(CPPM file system is unreadable caused by scratches)	DISC	CPPM	
F632	CPPM KEY DET is not available	Been revoked or falsified	DISC	EEPROM	CPPM
	Disc code				
F103	Illegal highlight Position	Big possibility of disc specification violation during highlight display	DISC		
	HIC Error				
F4FF	Force initialize failure (time out)		EEPROM	CPU	FEP
	Micro computer error				
F700	MBX overflow	When replying message to disc manager			
F701	Message command does not end	Next message is sent before replying to disc manager			
F702	Message command changes	Message is changed before it is sent as a reply to disc manager			
F880	Task number is not appropriate	Message coming from a non-existing task			
F890	Sending message when message is being sent to AV task	Sending message to AV task			
F891	Message couldn't be sent to AV task	Begin sending message to AV task			
F893	FROM falsification		FROM	CPU	

Error Code	Error Content	Additional error explanation	Defect 1	Defect 2	Defect 3
F894	EEPROM abnormality		EEPROM	Serial / communication on lone	
F8A0	Message command is not appropriate	Begin sending message to AV task			

7.4. Last Error Code saved during NO PLAY

Error code	Error Content	System computer	Setting task	System computer i error code
F0BF	6) Cannot playback because physical layer is not recoginizable	PCND_NOPLAY PHYSICAL 0x50	DriveManager	0xDOBF
F0C0	8) DVD: Cannot playback because it is not DVD Video /Adio/VR	PCND_NOPLAY VIDEO 0x70	DiscManager	0xDOC0
F0C1	9) DVD: Prohibited by the restricted region code	PCND_NOPLAY RCD 0x80	DiscManager	0xDOC1
F0C2	A) DVD: PAL restricted playback	PCND_NOPLAY PAL 0x90	DiscManager	0xDOC2
F0C3	B) DVD: Parental lock setting prohibits the playback of the entire title	PCND_NOPLAY PTL 0xA0	DiscManager	0xDOC3
F0C4	C) VCD: Prohibited because it is in PHOTO CD fromat	PCND_NOPLAY PHOTO CD 0xB0	DiscManager	0xDOC4
F0C5	VCD/CD: Prohibited because it is CDROM without CD-DA	PCND_NOPLAY CDROM 0xC0	DiscManager	0xDOC5

7.5. Service mode table 2

Pressing various button combinations on the player and remote control unit can activate the service modes.

Item	Play mode and button combination	Function	Display	Cancellation method
Jitter check	In PLAY mode, press "STOP" button on the player, and "5" button on the remote control unit.	Jitter check Jitter rate is measured and displayed. Measurement is repeatedly done in the cycle of one second. Read error counter starts from zero upon mode setting. When target block data failed to be read out, the counter advances by one increment. When the failure is caused by minor error, it may be corrected when retried to enable successful reading. In this case, the counter advances by one. When the error persists even after retry, the counter may jump by two or more.	J _xxx_yyy_zz Focus drive value Read error counter Jitter rate Jitter check mode Jitter rate is shown in decimal notation to one place of decimal. Focus drive value is shown in hexadecimal notation.	Press STOP button.
Error code check	Press "STOP" button on the player, and "0" button on the remote control unit.	Error code check The latest error code stored in EEPROM is displayed.	Error code (play_err) is expressed in the following convention. Error code = 0 x DAXX is expressed: -> DVD UXX Error code = 0 x DBXX is expressed: -> DVD HXX Error code = 0 x DXXX is expressed: -> DVD FXXX Error code = 0 x 0000 is expressed: -> DVD FXXX	Cancelled automatically 5 seconds later.
Initial setting of laser drive current	In STOP mode, press "STOP" button on the player, and "PAUSE" button on the remote control unit.	Initial setting of laser drive current. Initial current value for each of DVD laser and CD laser is separately saved in EEPROM.	LDO_034_028 CD laser current measurement DVD laser current measurement Laser current measurement mode	Cancelled automatically 5 seconds later.
DVD laser drive current measurement	In STOP mode, press "STOP" button on the player, and "DISPLAY" button on the remote control unit.	DVD laser drive current measurement ·DVD laser drive current is measured and the result is displayed together with the initial value stored in EEPROM. After the measurement, DVD laser emission is kept on. It is turned off when POWER key is switched off. (It is also turned off when the primary power is switched off.)	LDD_034_032 Measured current Initial current stored in EEPROM DVD laser current measurement mode The value denotes the current in decimal notation. The above example shows the initial current is 34mA and the measured value is 32mA.	Cancelled automatically 5 seconds later.
ADSC internal RAM data check	Press "STOP" button on the player, and "1" button on the remote control unit.	ADSC internal RAM data check ·ADSC internal RAM data is read out and displayed. Change the address with "CANCEL" key operation to show the data for 14 addresses.	A_DFA_6901 RAM data for specified address Address ADSC internal RAM data check mode The value is shown in hexadecimal notation. The above example shows the data in ADSC address DFAh is 6901h.	Press STOP button.
CD laser drive current measurement	In STOP mode, press "STOP" button on the player, and "3" button on the remote control unit.	CD laser drive current measurement CD laser drive current is measured and the result is displayed together with the initial value stored in EEPROM. After the measurement, CD laser emission is kept on. It is turned off when POWER key is switched off. (It is also turned off when the primary power is switched off.)	LDC_028_026 Measured current Initial current stored in EEPROM CD laser current measurement mode The value denotes the current in decimal notation. The above example shows the initial current is 28mA and the measured value is 26mA.	Cancelled automatically 5 seconds later.

Item	Play mode and button combination	Function	Display	Cancellation method
Version display	In STOP mode, press "STOP" button on the player, and "7" button on the remote control unit.	Version display	xx_y_zzz System controller release number System controller model number System controller generation	Cancelled automatically 5 seconds later.
Dealer's lock	In STOP mode, press "STOP" on the player, and "PLAY" button on the remote control unit for 3 second.	Dealer's lock The lock is switched ON or OFF. When dealer's lock is ON, it prohibits the tray opening. When the lock is switched, its ON/OFF status is stored in EEPROM.	· "LOCKED" sign appears when dealer's lock is switched on, or when secondary power key or tray opening key is pressed while the lock is on. ·"UNLOCKED" sign appears when dealer's lock is switched off.	Repeat the same operation.
Initialization	In STOP mode, press "STOP" button on the player and "≥10" button on the remote control unit.	Initialization User settings are cancelled and player is initialized to factory setting.	"INITIALIZED"	
Region display	In STOP mode, press "STOP" button on the player, and "6" button on the remote control unit.	Region display	x__yy__zzz N: NTSC / 6: PAL60 N: noPAL / P: PAL Region No.	Cancelled automatically 5 seconds later.
Timer 1 check	In STOP mode, press "STOP" button on the player, and "▲" button on the remote control unit.	Timer 1 check Operation time of laser operation timer is measured separately for DVD laser and CD laser.	T1_1234_5678 Shown to the left is DVD laser time, and to the right CD laser time. Time is shown in 4 digits of decimal notation in a unit of 10 hours. "0000" will follow "9999".	Cancelled automatically 5 seconds later.
Timer 1 reset	While displaying Timer 1 data, press "STOP" button on the player, and "▼" button on the remote control unit.	Timer 1 reset Operation time of laser operation timer of both DVD laser and CD laser is reset all at once.	T1_0000_0000	Cancelled automatically 5 seconds later.
Timer 2 check	In STOP mode, press "STOP" button on the player, and "▶" button on the remote control unit.	Timer 2 check Spindle motor operation timer	T2_1234 Time is shown in 4 digits of decimal notation in a unit of 10 hours. "0000" will follow "9999".	Cancelled automatically 5 seconds later.
Timer 2 reset	While displaying Timer 2 data, press "STOP" button on the player, and "◀" button on the remote control unit.	Timer 2 reset Spindle motor operation timer	T2_0000	Cancelled automatically 5 seconds later.

7.6. Sales demonstration lock function

This function prevents discs from being lost when the unit is used for sales demonstrations by disabling the disc eject function. "LOCKED" is displayed on the unit, and ordinary operation is disabled.

7.6.1. Setting

The sales demonstration lock is set by simultaneously pressing “STOP” button on the player and “PLAY” button on the remote control unit.

7.6.2. Cancellation

The lock can be cancelled by the same procedure as used in setting. ("UNLOCKED" is displayed on cancellation. Disconnecting the power cable from power outlet does not cancel the lock.)

7.7. Handling After Completing Repairs

Use the following procedure after completing repairs.

7.7.1. Method

Confirm that the power is turned on:

1. Press the “OPEN/CLOSE” button to close the tray.

2. Press the “POWER” button to turn off the power.

3. Disconnect the power plug from the outlet.

7.7.2. Precautions

Do not disconnect the power plug from the outlet with the tray still open, then close the tray manually.

8. Service Precautions

8.1. Recovery after the DVD player is repaired

- When a FROM or module P.C.B. is replaced, carry out the recovery processing to optimize the drive.
  Playback the recovery disc to process the recovery automatically.
- Recovery disc (Product number: RFKZD5TR006 or RFKZD03R004)
- Performing recovery

1. Load the recovery disc (RFKZD5TR006 or RFKZD03R004) on to the unit and run it.
2. Recovery is performed automatically. When it is finished, a message appears on the screen.
3. Remove the recovery disc.
4. Turn off the power.

Note:
This unit requires no initialization process carried out after the traditional DVD players were repaired.
When the recovery measure are taken, the customer setting will return to the factory preset settings as same as the procedure described in item of "Initialization" in 7.6. is carried out. Write down the contents of the settingbeforerecoveryprocessing, and reset the unit.

8.2. Firmware version-up of the DVD player

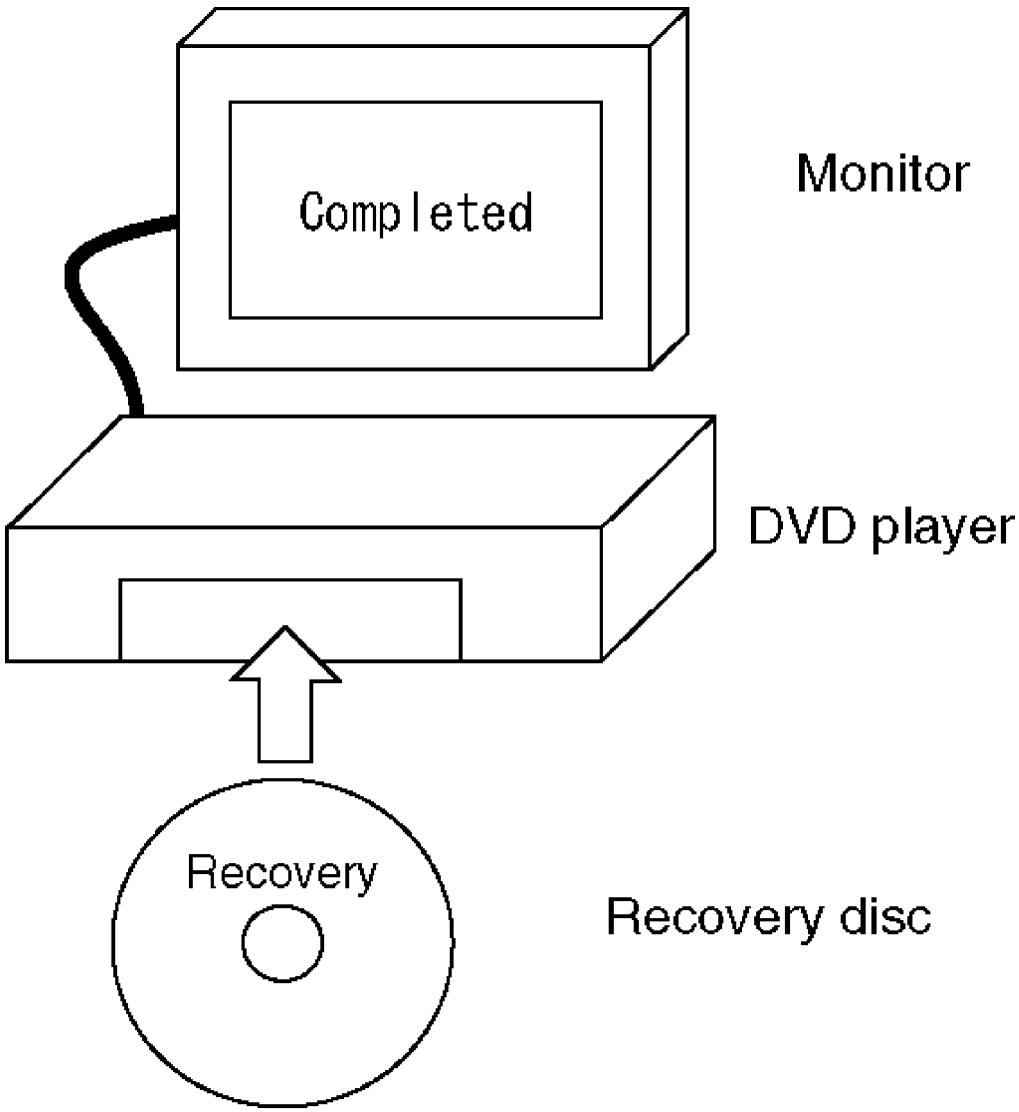
- The firmware of the DVD player may be renewed to improve the quality including operationality and playback ability to the substandard discs processing to optimize the drive.
  The recovery disc has also firmware version-up.
- After version-up, recovery processing is executed automatically.
- Part number of the recovery disc for version-up will be noticed when it is supplied.
- Updating firmware

1. Load the recovery disc that is supplied to the unit and run it.
2. Firmware version of the unit is automatically checked.
   Appropriate message appears whenever necessary.
3. Using remote control cursor key, select whether version updating is to be done or not. (Selection of Yes/No)
4. a. If Yes is selected, version updating is performed.

b. If No is selected, only recovery is performed.

5. **a. When updating is finished, remove the disc according to the message appearing on the screen.**
   b. Remove the disc according to the message appearing on the screen.
6. **Turn off the power.**

Note:
If the AC power supply is shut down during version-up due to a power failure, the version-up is improperly carried out.
In such a case, replace the FROM and carry out the version-up again.



8.3. Overview of each function

8.3.1. Cumulative operation time display

1. Operation/display

DVD/CD laser operation time
Unit: 10 hours in decimal notation

Spindle motor operation time
Unit: 10 hours in decimal notation

Key operations are as follows.
Laser operation time ..... In STOP mode, main unit [STOP]+ remote controller [▲]
Spindle motor operation time ..... In STOP mode, main unit [STOP]+ remote controller [▶]
To reset the timer, perform the following while displaying the time with above key operation.
Laser operation time ..... In STOP mode, main unit [STOP]+ remote controller [▼]
Spindle motor operation time ..... In STOP mode, main unit [STOP]+ remote controller [◀]

2. How to utilize

Reference information in fault diagnosis of laser or spindle motor system
Review of faulty point in repeated repair

9. Adjustment Procedures

9.1. Service Tools and Equipment

Application	Name	Number
Tilt adjustment	DVD test disc	DVDT-S15 or DVDT-S01
	Hex wrench	Commercially available hex wrench
Others	Screw lock	RZZ0L01
	Grease	RFKXGAK152
	Oil	RFKXGA1280, JZS0648
Confirmation	CD test disc	PVCD-K06 or any other commercially available disc
	VCD test disc	PVCD-K06 or any other commercially available disc
	Recovery disc	RFKZD5TR006 or RFKZD03R004

9.2. Important points in adjustment

9.2.1. Important points in optical adjustment

- Before starting optical adjustment, be sure to take anti-static measures.
- Optical pickup tilt adjustment is needed after replacement of the following components.

1. Optical pickup unit
2. Spindle motor unit
3. Optical pickup peripheral parts (such as rail)

Notes
Adjustment is generally unnecessary after replacing other parts of the traverse unit. However, make adjustment if there is a noticeable degradation in picture quality. Optical adjustments cannot be made inside the optical pickup. Adjustment isgenerally unnecessaryafterreplacing the traverse unit.

9.2.2. Important points in electrical adjustment

- Follow the adjustment procedures described in this Manual.

9.3. Storing and Handling Test Discs

- Surface precision is vital for DVD test discs. Be sure to store and handle them carefully.

1. Do not place discs directly onto the workbench, etc., after use.
2. Handle discs carefully in order to maintain their flatness. Place them into their case after use and store them vertically. Store discs in a cool place where they are not exposed to direct sunlight or air from air conditioners.
3. Accurate adjustment will not be possible if the disc is warped when placed on a surface made of glass, etc. If this happens, use a new test disc to make optical adjustments.
4. If adjustment is done using a warped disc, the adjustment will be incorrect and some discs will not be playable.

9.4. Optical adjustment

9.4.1. Optical pickup tilt adjustment

Measurement point	Adjustment point	Mode	Disc
	Tangential adjustment screw Tilt adjustment screw	T01 (inner periphery) play T43 (outer periphery) play	DVDR-S15 or DVD
Measuring equipment		Adjustment value	
None (Main unit display for servicing is used.)		Adjust to the minimum jitter value.	

9.4.1.1. Adjustment procedure

1. While pressing “STOP” button on the main unit, press "5" on the remote control unit.
2. Confirm that "J_xxx_yyy_zz" is shown on the front display.

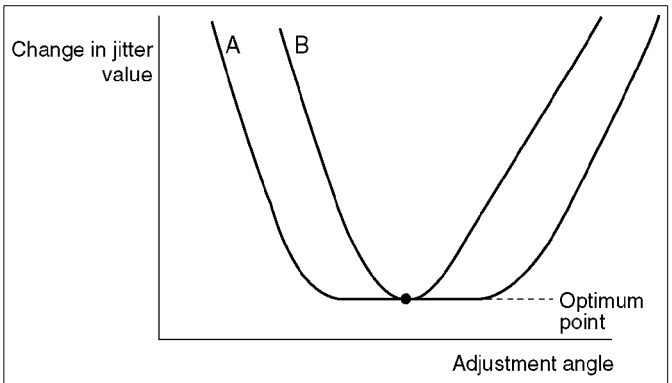
For your information:
"yyy" and "zz" shown to the right have nothing to do with the jitter value. "yyy" is the error counter, while "zz" is the focus drive value.

Note:
Jitter value appears on the front display.

3. Play test disc T01 (inner periphery).
4. Adjust tangential adjustment screw so that the jitter value is minimized.
5. Play test disc T43 (outer periphery).
6. Adjust tilt adjustment screw 1 so that the jitter value is minimized.
7. Play test disc T43 (outer periphery).
8. Adjust tilt adjustment screw 2 so that the jitter value is minimized.
9. Repeat adjusting tilt adjustment screws 1 and 2 alternately until the jitter value is minimized.

9.4.1.2. Important points

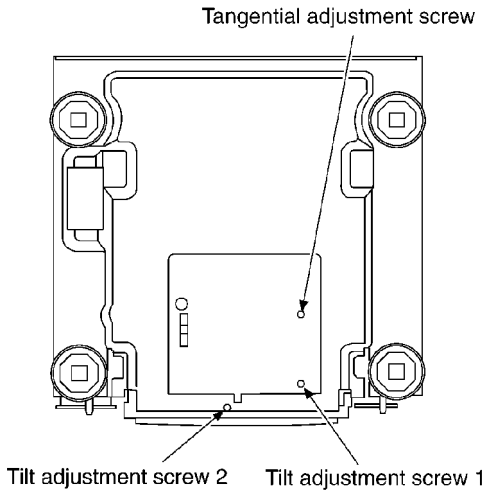
1. Make tangential adjustment first, and then make tilt adjustment.
2. Repeat adjusting two or three times to find the optimum point.
3. Finish the procedure with tilt adjustment.



Jitter value depends on the model:

1. If the jitter value changes like B, the optimum point is easy to find.

2. If the jitter value changes like A, set the optimum point near the middle.

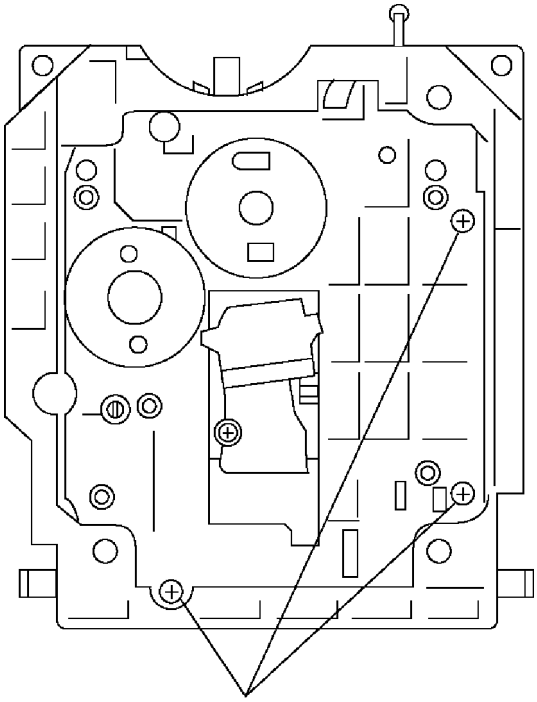


9.4.1.3. Check after adjustment

Play test disc or any other disc to make sure there is no picture degradation in the inner, middle and outer peripheries, and no audio skipping. After adjustment is finished, lock each adjustment screw in position using screw lock.

9.4.1.4. Procedure for screw lock

1. **After adjustment, remove top cover, tray, clamper base and traverse unit in this sequence.**
2. **Lay the traverse unit upside down, and fix adjustment screw with screw lock.**
3. **After fixing, reassemble traverse unit, clamper base, tray and top cover.**



Screw lock
(adjustment screw)

10. To Supply Power Source

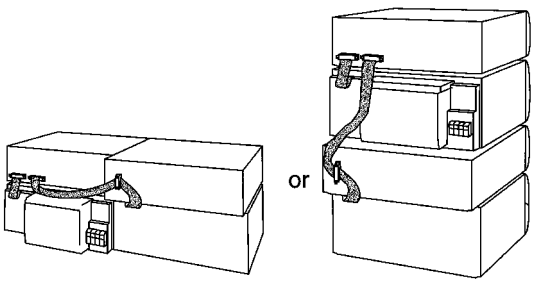
Cautions:

- It is very dangerous to look at or touch the laser beam. (Laser radiation is invisible.)
With the unit turned “on”, laser radiation is emitted from the pickup lens.

- Avoid exposure to the lase beam, especially when performing adjustments.

This unit SL-DV290 is designed to operate on power supplied from the system connected. (For system connection, refer to Fig. 4.)

Fig. 4



When the unit SL-DV290 has to test and service alone, use the following method to supply power source.

1. Connect a DC power supply to JK1-5pin and JK1-6pin and .
Then adjust the outputs to 10V for 5pin (refer to Fig. 5 and Fig. 6)

Fig. 5

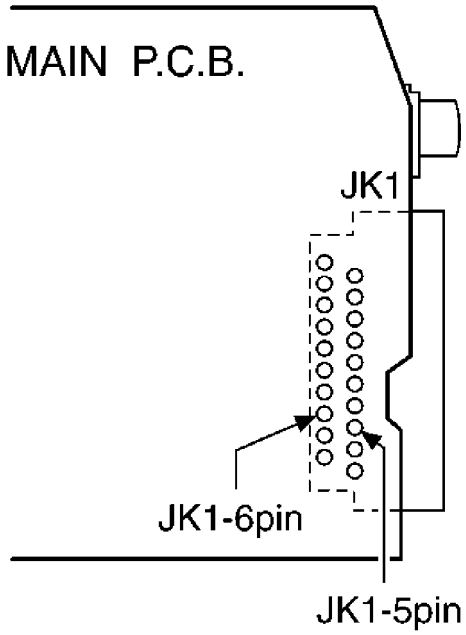
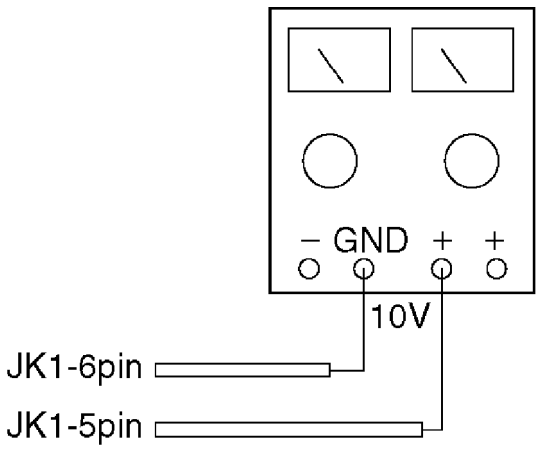


Fig. 6



Note:
Use only this method when checking the voltage etc..
In case of checking operations, use the system connections to supply power source.

11. Block Diagram

12. Schematic Diagram Notes

12.1. Type Illustration of IC's, Transistors and Diodes

12.2. Schematic Diagram Notes

This schematic diagram may be modified at any time with the development of new technology.

Notes:

- **S1 : Tray position 1 detect switch.**
- **S2 : Tray position 2 detect switch.**
- **S3 : Tray open detect switch.**
- **S4 : Clamp detect switch.**
- **S5 : Bottom detect switch.**
- **S601 : Disc select (DISC5) switch.**
- **S602 : Disc select (DISC4) switch.**
- **S603 : Disc select (DISC3) switch.**
- **S604 : Disc select (DISC2) switch.**
- **S605 : Disc select (DISC1) switch.**
- **S606 : Disc direct open (DIRECT OPEN, DISC1) switch.**
- **S607 : Disc direct open (DIRECT OPEN, DISC2) switch.**
- **S608 : Disc direct open (DIRECT OPEN, DISC3) switch.**
- **S609 : Disc direct open (DIRECT OPEN, DISC4) switch.**
- **S610 : Disc direct open (DIRECT OPEN, DISC5) switch.**
- **S611 : Disc tray open/close (⏏, OPEN/CLOSE) switch.**
- **S612 : A-B repeat (A-B REPEAT) switch.**
- **S613 : Repeat (REPEAT) switch.**
- **S614 : CD edit (CD EDIT) switch.**
- **S615 : Cinema mode (CINEMA MODE) switch.**
- **S616 : Double re-master (DOUBLE RE-MASTER) switch.**
- **S617 : Pause (❚❚) switch.**
- **S618 : Stop (■) switch.**
- **S619 : Play (▷) switch.**
- **S620 : R. skip/search (⏮ / ◀◀) switch.**
- **S621 : F. skip/search (▶▶ / ⏭) switch.**
- **Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internalimpedanceofthe DC circuit tester.**

No mark: CD STOP

( ): CD play [1kHz, L+R, 0dB]

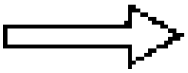
Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purpose of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacture's specified parts showninthe parts list.

Caution!

- IC and LSI are sensitive to static electricity.
- Secondary trouble can be prevented by taking care during repair.
- Cover the parts boxes made of plastics with aluminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the legs of IC or LSI with the fingers directly.

Voltage and signal lines

: Positive voltage line


: AUDIO signal line

: AUDIO/VIDEO signal line

: VIDEO signal line

: Surround SP. signal line

: Center SP. signal line

: Sub woofer signal line

13. Schematic Diagram

14. Abbreviations

INITIAL/LOGO		ABBREVIATIONS
A	A0~UP	ADDRESS
	ACLK	AUDIO CLOCK
	AD0~UP	ADDRESS BUS
	ADATA	AUDIO PES PACKET DATA
	ALE	ADDRESS LATCH ENABLE
	AMUTE	AUDIO MUTE
	AREQ	AUDIO PES PACKET REQUEST
	ARF	AUDIO RF
	ASI	SERVO AMP INVERTED INPUT
	ASO	SERVOAMPOUTPUT
	ASYNC	AUDIOWORDDISTINCTION SYNC
B	BCK	BIT CLOCK (PCM)
	BCKIN	BIT CLOCK INPUT
	BDO	BLACK DROP OUT
	BLKCK	SUB CODE BLOCK CLOCK
	BOTTOM	CAP. FOR BOTTOM HOLD
	BYP	BYPATH
	BYTCK	BYTE CLOCK
C	CAV	CONSTANT ANGULAR VELOCITY
	CBDO	CAP. BLACK DROP OUT
	CD	COMPACT DISC
	CDSCK	CD SERIAL DATA CLOCK
	CDSRDATA	CD SERIAL DATA
	CDRF	CD RF (EFM) SIGNAL
	CDV	COMPACT DISC-VIDEO
	CHNDATA	CHANNEL DATA
	CKSL	SYSTEMCLOCKSELECT
	CLV	CONSTANTLINEARVELOCITY
	COFTR	CAP. OFF TRACK
	CPA	CPU ADDRESS
	CPCS	CPU CHIP SELECT
	CPDT	CPU DATA
	CPUADR	CPU ADDRESS LATCH
	CPUADT	CPU ADDRESS DATA BUS
	CPUIRQ	CPU INTERRUPT REQUEST
	CPRD	CPU READ ENABLE
	CPWR	CPU WRITE ENABLE
	CS	CHIPSELECT
	CSYNCIN	COMPOSITESYNCIN
	CSYNCOUT	COMPOSITESYNC OUT

INITIAL/LOGO		ABBREVIATIONS
D	DACCK	D/A CONVERTER CLOCK
	DEEMP	DEEMPHASIS BIT ON/OFF
	DEMPH	DEEMPHASIS SWITCHING
	DIG0~UP	FL DIGIT OUTPUT
	DIN	DATA INPUT
	DMSRCK	DM SERIAL DATA READ CLOCK
	DMUTE	
	DO	DIGITAL MUTE CONTROL
	DOUT0~UP	DROPOUT
		DATAOUTPUT
	DRF	DATASLICERF (BIAS)
	DRPOUT	DROP OUT SIGNAL
	DREQ	DATA REQUEST
	DRESP	DATA RESPONSE
	DSC	DIGITAL SERVO CONTROLLER
	DSLF	DATA SLICE LOOP FILTER
	DVD	DIGITAL VIDEO DISC

INITIAL/LOGO		ABBREVIATIONS
E	EC	ERROR TORQUE CONTROL
	ECR	ERROR TORQUE CONTROL REFERENCE
	ENCSEL	ENCODER SELECT
	ETMCLK	EXTERNAL M CLOCK (81MHz/
	ETSCLK	40.5MHz)
		EXTERNAL S CLOCK (54MHz)
F	FBAL	FOCUS BALANCE
	FCLK	FRAME CLOCK
	FE	FOCUS ERROR
	FFI	FOCUS ERROR AMP INVERTED
	FEO	INPUT
	FG	FOCUS ERROR AMP OUTPUT
	FSC	FREQUENCY GENERATOR
	FSCK	FREQUENCY SUB CARRIER
		FS (384 OVER SAMPLING)CLOCK
G	GND	COMMON GROUNDING (EARTH)
H	HA0~UP	HOST ADDRESS
	HD0~UP	HOST DATA
	HINT	HOST INTERRUPT
	HRXW	HOST READ/WRITE

INITIAL/LOGO		ABBREVIATIONS
I	IECOUT	IEC958 FORMAT DATA OUTPUT
	IPFRAG	
	IREF	INTERPOLATION FLAG
	ISEL	I (CURRENT) REFERENCE
		INTERFACE MODE SELECT
L	LDON	LASER DIODE CONTROL
	LPC	LASER POWER CONTROL
	LRCK	L CH/R CH DISTINCTION CLOCK
M	MA0~UP	MEMORY ADDRESS
	MCK	MEMORY CLOCK
	MCKI	MEMORY CLOCK INPUT
	MCLK	MEMORY SERIAL COMMAND CLOCK
	MDATA	MEMORY SERIAL COMMAND DATA
	MDQ0~UP	MEMORY DATA INPUT/OUTPUT
	MDQM	MEMORY DATA I/OMASK
	MLD	MEMORYSERIALCOMMANDLOAD
	MPEG	MOVING PICTURE EXPERTS GROUP
O	ODC	OPTICAL DISC CONTROLLER
	OFTR	OFF TRACKING
	OSCI	OSCILLATOR INPUT
	OSCO	OSCILLATOR OUTPUT
	OSD	ON SCREEN DISPLAY
P	P1~UP	PORT
	PCD	CD TRACKING PHASE DIFFERENCE
	PCK	PLL CLOCK
	PDVD	DVD TRACKING PHASE DIFFERENCE
	PEAK	CAP. FOR PEAK HOLD
	PLLCLK / PLLOK	CHANNEL PLL CLOCK
	PWMCTL	PLL LOCK
	PWMDA	PWM OUTPUT CONTROL
	PWMOA, B	PULSEWAVEMOTORDRIVEA
		PULSE WAVE MOTOR OUT A, B

INITIAL/LOGO		ABBREVIATIONS
R	RE	READ ENABLE
	RFENV	RF ENVELOPE
	RFO	RF PHASE DIFFERENCE
	RS	OUTPUT
	RSEL	(CD-ROM) REGISTER SELECT
	RST	RF POLARITY SELECT
	RSV	RESET
		RESERVE
S	SBI0, 1	SERIAL DATA INPUT
	SBO0	SERIAL DATA OUTPUT
	SBT0, 1	SERIAL CLOCK
	SCK	SERIAL DATA CLOCK
	SCKR	AUDIO SERIAL CLOCK
	SCL	RECEIVER
	SCLK	SERIAL CLOCK
	SDA	SERIAL CLOCK
	SEG0~UP	SERIAL DATA
	SELCLK	FL SEGMENTOUTPUT
	SEN	SELECTCLOCK
	SIN1, 2	SERIALPORTENABLE
	SOUT1, 2	SERIAL DATA IN
	SPDI	SERIAL DATA OUT
	SPDO	SERIAL PORT DATA INPUT
	SPEN	SERIAL PORT DATA OUTPUT
	SPRCLK	SERIAL PORT R/W ENABLE
	SPWCLK	SERIAL PORT READ CLOCK
	SQCK	SERIALPORT WRITE CLOCK
	SQCX	SUB CODE Q CLOCK
	SRDATA	SUBCODEQDATA READ CLOCK
	SRMADR	
	SRMDT0~7	SERIAL DATA
		SRAM ADDRESS BUS
	SS	SRAM DATA BUS 0~7
	STAT	START/STOP
	STCLK	STATUS
	STD0~UP	STREAM DATA CLOCK
	STENABLE	STREAM DATA
		STREAMDATA INPUT ENABLE
	STSEL	STREAM DATA POLARITY
	STVALID	SELECT
	SUBC	STREAMDATAVALIDITY
	SBCK	SUBCODE SERIAL
	SUBQ	SUB CODE CLOCK
	SYSCLK	SUB CODE Q DATA
		SYSTEM CLOCK

		SYSTEM CLOCK

INITIAL/LOGO		ABBREVIATIONS
T	TE	TRACKING ERROR
	TIBAL	BALANCE CONTROL
	TID	BALANCE OUTPUT 1
	TIN	BALANCE INPUT
	TIP	BALANCE INPUT
	TIS	BALANCE OUTPUT 2
	TPSN	OP AMP INPUT
	TPSO	OP AMP OUTPUT
	TPSP	OP AMP INVERTED INPUT
	TRCRS	TRACKCROSSSIGNAL
	TRON	TRACKINGON
	TRSON	TRAVERSESERVO ON

INITIAL/LOGO		ABBREVIATIONS
V	VBLANK	V BLANKING
	VCC	COLLECTOR POWER SUPPLY VOLTAGE
	VCDCONT	VIDEO CD CONTROL (TRACKING
	VDD	BALANCE)
	VFB	DRAIN POWER SUPPLY
	VREF	VOLTAGE
	VSS	VIDEO FEED BACK VOLTAGE REFERENCE SOURCEPOWERSUPPLYVOLTAGE
W	WAIT	BUS CYCLE WAIT
	WDCK	WORD CLOCK
	WEH	WRITE ENABLE HIGH
	WSR	WORD SELECT RECEIVER

INITIAL/LOGO		ABBREVIATIONS
X	X	X' TAL
	XALE	X ADDRESS LATCH ENABLE
	XAREQ	X AUDIO DATA REQUEST
	XCDROM	X CD ROM CHIP SELECT
	XCS	X CHIP SELECT
	XCSYNC	X COMPOSITE SYNC
	XDS	X DATA STROBE
	XHSYNCO	X HORIZONTAL SYNC OUTPUT
	XHINT	XHINTERRUPTREQUEST
	XI	X' TALOSCILLATORINPUT
	XINT	X INTERRUPT
	XMW	X MEMORY WRITE ENABLE
	XO	X' TAL OSCILLATOR OUTPUT
	XRE	X READ ENABLE
	XSRMCE	X SRAM CHIP ENABLE
	XSRMOE	X SRAM OUTPUT ENABLE
	XSRMWE	X SRAM WRITE ENABLE
	XVCS	XV-DEC CHIPSELECT
	XVDS	XV-DEC CONTROLBUS
	XVSYNCO	STROBE X VERTICAL SYNC OUTPUT

15. Printed Circuit Board Diagram

16. Wiring Connection Diagram

17. Terminal Function of IC's

17.1. IC401 (C2BBFD000402): SYSTEM CONTROL

Pin No.	Mark	I/O Division	Function
1	VCC	I	Connected to power supply
2	VREF		
3	AVSS	—	Connected to GND
4	MUTE	O	Mute control output terminal
5	PWCONT	O	DVD module power supply control output terminal
6	SYNC	I	Power failure detect signal input terminal
7	C/SW SEL	O	Center/sub woofer speaker select signal output terminal
8	B_REQ	I	Serial communication request signal input terminal
9	B_CS	O	Serial communication chip select signal output terminal
10	B_CLK	O	Serial communication clock signal output terminal
11	DATA O	O	Serial communication data signal output terminal
12	DATA I	I	Serial communication data signal input terminal
13	MIXSEL	O	Select control output terminal for wide picture
14	WIDE1		
15	CNVss	—	Connected to GND
16	TEST	I	Test mode input terminal
17	E-CS	—	Connected to GND
18	RESET	I	Reset signal input terminal
19	XIN	I	Crystal oscillator input terminal (f=8MHz)
20	XOUT	O	Crystal oscillator output terminal (f=8MHz)
21	Vss	—	Connected to GND
22	LED-STB	O	Serial signal output to LED drive
23	LED/ / E-CLK	O	Serial signal output terminal to LED drive or EEPROM
24	LED/ / E-DATA	O	Serial signal output terminal to LED drive or EEPROM
25	LED-CLR	O	Latch clear signal output terminal to LED drive
26	PLG	O	Plunger control signal output terminal
27	SW5	I	Bottom switch detect signal input terminal

			input terminal

Pin No.	Mark	I/O Division	Function
28	PSTN	I	Position sensor detect signal input terminal
29	SW2	I	Disc tray position 2 detect signal input terminal
30	SW1	I	Disc tray position 1 detect signal input terminal
31	SW3	I	Disc tray open detect signal input terminal
32	CCW	O	Motor drive control signal output terminal (forward direction)
33	CW	O	Motor drive control signal output terminal (reverse direction)
34	HALF	O	Motor drive control signal output terminal (speed)
35	DVD-CLK	I	Serial communication signal input terminal for DVD main micro-computer
36	DVD-CMD	O	Serial communication signal output terminal for DVD main micro-computer
37	DVD-STAT	I	Serial communication signal input for DVD main micro-computer
38	DISC CS	—	Connected to GND through resistor
39	SW4	I	Clamp switch detect signal input terminal
40	KEY2	I	Operation key signal input terminal
41	KEY1		
42	RGN CS	I	Area select signal input terminal

18. Replacement Parts List

Notes:

***Important safety notice: / Components identified by ⚠ mark have special characteristics important for safety. / Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors),low-noise(resistors),etc. are used. / When replacing any of components, be sure to use only manufacture's specified parts shown in the parts list. / * Warning: This product uses a laser diode. Refer to caution statements.**

***ACHTUNG:Die lasereinheit nicht zerlegen. Die lasereinheit darf nur gegen einc vom hersteller spezifizierte einheit ausgetauscht werden. / *Capacity values are in microfarads (uF) unless**

specified otherwise, P=Pico-farads(pF)F=Farads(F) / *Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000K (OHM)
*The markings (RTL) indicate that the retention time is limited for these items. After the discontinuation of these assemblies in production, it will no longer be available.
*All parts are supplied by SPC.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	REZ1225-1J	FFC(14P)	1	
2	REZ1390-J	FFC(15P)	1	
3	REZ1391-J	FFC(17P)	1	
4	REZ1392-J	FFC(26P)	1	
5	RMX0210	SPACER	1	
6	RYF0592-1S	TRAY ORNAMENT	1	
7	RKA0105-K	RUBBER	4	
8	RKA0106-N	FOOT RING	4	
9	RYP1174-S1	FRONT PANEL ASS'Y	1	
9-1	RGB0025-A	TECHNICS BADGE	1	
10	XTB3+5JFZ	SCREW	2	
11	XTBS3+8JFZ1	SCREW	5	
12	XTW3+8T	SCREW	2	
13	RHD30007-1S	SCREW	4	
14	RKM0399-S1	TOP CABINET	1	
15	REZ1377-J	FFC(50P)	1	
16	RHD30090	SCREW	4	
17	REZ1314	FLAT CABLE	1	
18	RGR0315A-J1	REAR PANEL	1	(EE)
18	RGR0315A-K1	REAR PANEL	1	(GN)
19	RQLS0233	LASER CAUTION LABEL	1	
301	RML0517	TIMING LEVER	1	
302	RML0516	LEVER	1	
303	RMB0551	UPPER SPINDLE SPRING	1	
304	RMQ0744	LOWER HOOK	1	
305	RDV0056	BELT	1	
306	RML0525	FRONT LOCK LEVER	1	
307	RML0526	DISC LEVER	1	
308	RDG0424	DRIVE GEAR	1	
309	RDG0425	CHANGE GEAR	1	
310	RDG0427	TRAVERSE CAM GEAR	1	
311	RDG0428	TRAVERSE RELAY GEAR	1	
312	RDG0426	UP/DOWN GEAR	1	
313	RDG0429	PULLEY GEAR	1	
314	RMB0549-1	CHANGE GEAR SPRING	1	
315	RMQ0748	GEAR HOLDER	1	
316	RMB0553	SPRING	1	
317	RML0530	LEVER	1	
318	RML0518	CONNECTION LEVER	1	
319	RMM0201	SLIDE PLATE(1)	1	
320	RME0258	REAR LOCK SPRING	1	
321	RML0521	REAR LOCK LEVER	1	
322	RME0257	TRAY LOCK LEVER SPRING	1	
323	RML0520	TRAY LOCK	1	
324	RMM0202	SLIDE PLATE(2)	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
325	XTB3+10J	SCREW	9	
326	RMR0624-W5	CLAMPER	1	
327	RMR1367-K	FIXED PLATE	1	
328	RMB0561	ASSIST LEVER SPRING	1	
329	RMR1121-K	MECHANISM COVER	1	
330	RMQ0742	SPINDLE BASE	1	
331	RXQ0561	DISC TRAY	1	
332	RME0261	FRONT LOCK SPRING	1	
333	RMX0140	DISC SPACER	5	
334	RHM0001	MAGNET	1	
335	RMQ0749	UPPER SPINDLE	1	
336	RMX0141	SPACER	1	
337	XTW3+10T	SCREW	4	
339	RXQ0595	MOTOR ASS'Y	1	
341	RSJ0003	SOLENOLD	1	
342	RHM212ZD	MOVING CORE	1	
344	RML0519	CD LEVER	1	
346	RML0522	LOADING STOPPER	1	
347	RMQ0745	LOWER SPINDLE	1	
348	RMQ0746	UP/DOWN BASE	1	
349	RMB0550	LOWER SPINDLE SPRING	1	
350	RMQ0747	UPPER HOOK	1	
351	RME0263	SPRING	1	
352	RMQ0743	SPINDLE SHAFT	1	
353	RMB0552	CUSHION SPRING	1	
354	RDG0430	RELAY GEAR(A)	1	
355	RDG0431	RELAY GEAR(B)	1	
356	RME0262	DISC LEVER SPRING	1	
376	RMC0387	SUPPORT SPRING	1	
377	RMA1003	BACK YOKE	1	
378	XTV2+6G	SCREW	1	
401	RDG0499	TRAVERSE GEAR(A)	1	
402	RHD17045	SCREW	2	
404	RMC0415	ADJUST SPRING HOLDER	3	
407	RME0320	ADJUST SPRING	3	
408	RMM0234-1	TRV DRIVE RACK	1	
409	RMS0710-1	GUIDE SHAFT(1)	1	
410	RMS0711-1	GUIDE SHAFT(2)	1	
411	RDG0500	TRAVERSE GEAR(B)	1	
412	RDG0501	TRAVERSE GEAR(C)	1	
413	RME0319	TRAVERSE GEAR SPRING	1	
414	RAF3023A-1	OPTICAL PICK-UP	1	⚠
415	RJB2308A-1	INTERFACE FPC	1	
417	RHD14095	SCREW	1	
418	VHD1224	SCREW	4	
419	RMX0192	INNER STOPPER	1	
420	RMG0561-T	CUSHION RUBBER	1	
422	RMG0545-A1	FLOATING RUBBER	4	
423	RXQ1028	SPINDLE MOTOR ASS'Y	1	
424	RMR1366-K1	TRAVERSE CHASSIS	1	
425	RMS0712-1	FIXED PIN	4	
428	RHD20060	SCREW	1	
429	RMG0558-K	RUBBER	4	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C1	ECEA1CKS101	16V 100U	1	
C2	ECBA1E103ZF5	25V 0.01U	1	
C3	ECA1CM332	16V 3300U	1	
C4	ECA1CM471	16V 470U	1	
C7	EEUFC0J821B	6.3V 820U	1	
C10	ECJ1VB1H102K	50V 1000P	1	
C11	ECEA1CKS100	16V 10U	1	
C12	ECJ1VB1H102K	50V 1000P	1	
C13	F1H1H103A748	50V 0.01U	1	
C14	ECEA1AKS101	10V 100U	1	
C15	ECEA1AKS221	10V 220U	1	
C16	ECA0JM222	6.3V 2200U	1	
C19	ECJ1VB1H102K	50V 1000P	1	
C20	ECEA1AKS470	10V 47U	1	
C21	ECJ1VB1H102K	50V 1000P	1	
C22	ECEA1CKS100	16V 10U	1	
C23	ECEA1AKS470	10V 47U	1	
C24	ECJ1VB1H102K	50V 1000P	1	
C26	ECEA1CKS100	16V 10U	1	
C27	F1J1C474A091	16V 0.47U	1	
C28	ECJ1VF1C104Z	16V 0.1U	1	
C29	F1H1H103A748	50V 0.01U	1	
C30	ECJ1VB1H102K	50V 1000P	1	
C80	F1H1H470A736	50V 47P	1	
C305	F1H1H103A748	50V 0.01U	1	
C308	ECEA1HKS010	50V 1U	1	
C401	F2A0J4700007	6.3V 47U	1	
C402	ECEA1HKS3R3	50V 3.3U	1	
C403	F1H1H103A748	50V 0.01U	1	
C404	ECJ1VB1H102K	50V 1000P	1	
C405	ECJ1VF1C104Z	16V 0.1U	1	
C406	EEAFC0J101B	6.3V 100U	1	
C407	F1H1H101A004	50V 100P	1	
C408,09	F1H1H471A736	50V 470P	2	
C410	F1H1H101A004	50V 100P	1	
C411,12	ECJ1VF1C104Z	16V 0.1U	2	
C501,02	F1H1H103A748	50V 0.01U	2	
C503,04	ECA1HAK010XI	50V 1U	2	
C505	F1H1H470A736	50V 47P	1	
C506,07	F1H1H103A748	50V 0.01U	2	
C508	ECA0JAK101XB	6.3V 100U	1	
C509	ECA0JAM102XB	6.3V 1000U	1	
C510	ECJ1VF1C104Z	16V 0.1U	1	
C511	ECA0JAK101XB	6.3V 100U	1	
C512	ECA0JAM102XB	6.3V 1000U	1	
C513,14	F1H1H103A748	50V 0.01U	2	
C515	ECA0JAK221XH	6.3V 220U	1	
C601-04	F1H1H101A004	50V 100P	4	
C605	ECJ1VF1C104Z	16V 0.1U	1	
C801,02	ECEA1CKS100	16V 10U	2	
C803,04	F1H1H471A736	50V 470P	2	
C806	F1H1H470A736	50V 47P	1	
C807	F2A0J4700007	6.3V 47U	1	
C808	ECJ1VF1C104Z	16V 0.1U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C809,10	ECEA1CKS220	16V 22U	2	
C811,12	ECJ1VB1H222K	50V 2200P	2	
C813-16	ECEA1CKS100	16V 10U	4	
C817	ECJ1VF1C104Z	16V 0.1U	1	
C818	F2A0J4700007	6.3V 47U	1	
C819	ECEA1AKS101	10V 100U	1	
C821,22	ECEA1CKS100	16V 10U	2	
C823,24	F1H1H471A736	50V 470P	2	
C825,26	F1H1H470A736	50V 47P	2	
C827	F2A0J4700007	6.3V 47U	1	
C828	ECJ1VF1C104Z	16V 0.1U	1	
C829,30	F2A0J4700007	6.3V 47U	2	
C831,32	ECJ1VB1H222K	50V 2200P	2	
C833,34	F2A0J4700007	6.3V 47U	2	
C835,36	ECEA1CKS100	16V 10U	2	
C837,38	F1H1H471A736	50V 470P	2	
C839,40	F1H1H470A736	50V 47P	2	
C841	F2A0J4700007	6.3V 47U	1	
C842	ECJ1VF1C104Z	16V 0.1U	1	
C843,44	F2A0J4700007	6.3V 47U	2	
C845,46	ECJ1VB1H222K	50V 2200P	2	
C847-49	F2A0J4700007	6.3V 47U	3	
C892	ECJ1VF1C104Z	16V 0.1U	1	
C2001,02	EEE0JA101SP	6.3V 100U	2	
C2003-18	ECJ1ZF1C104Z	16V 0.1U	16	
C2021	EEE0JA101SP	6.3V 100U	1	
C2022-25	ECJ1ZF1C104Z	16V 0.1U	4	
C2031,32	ECJ1VB1C104K	16V 0.1U	2	
C2034	ECJ1VB1C393K	16V 0.039U	1	
C2035	ECJ1VB1H822K	50V 8200P	1	
C2036	ECJ1VB1C104K	16V 0.1U	1	
C2038	ECJ1VB1C104K	16V 0.1U	1	
C2039	ECJ1VB1H103K	50V 0.01U	1	
C2040	ECJ1VC1H102J	50V 1000P	1	
C2041,42	ECJ1VC1H331J	50V 330P	2	
C2043	ECJ1VC1H101J	50V 100P	1	
C2044	ECJ1VC1H391J	50V 390P	1	
C2045,46	ECJ1VC1H102J	50V 1000P	2	
C2047	ECJ1VB1H103K	50V 0.01U	1	
C2048	ECJ1VB1C153K	16V 0.015U	1	
C2050	ECJ1VB1C333K	16V 0.033U	1	
C2051	ECJ1VC1H680J	50V 68P	1	
C2052,53	ECJ1ZF1C104Z	16V 0.1U	2	
C2054	ECJ1VC1H681J	50V 680P	1	
C2055	ECJ1VB1H682K	50V 6800P	1	
C2056,57	ECJ1VB1H272K	50V 2700P	2	
C2058	ECJ1VC1H102J	50V 1000P	1	
C2059	ECJ1VC1H821J	50V 820P	1	
C2060	ECJ1VC1H102J	50V 1000P	1	
C2061,62	ECJ1VC1H331J	50V 330P	2	
C2063-65	ECJ1VC1H102J	50V 1000P	3	
C2066,67	ECJ1VB1H472K	50V 4700P	2	
C2073	ECJ1ZF1C104Z	16V 0.1U	1	
C2101,02	ECJ1ZF1C104Z	16V 0.1U	2	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C2501	EEVFC0J221P	6.3V 220U	1	
C2502	ECEV1CA101WP	16V 100U	1	
C2503	ECEV1CA220WR	16V 22U	1	
C2504-08	ECJ1VF1C104Z	16V 0.1U	5	
C2509	EEVFC1C100R	16V 10U	1	
C2510-13	ECJ1VF1C104Z	16V 0.1U	4	
C3001,02	F2G0J331A015	6.3V 330U	2	
C3003-18	ECJ1ZF1C104Z	16V 0.1U	16	
C3019	F1H0J1050013	6.3V 1U	1	
C3020	ECJ1ZF1C104Z	16V 0.1U	1	
C3021	F1H0J1050013	6.3V 1U	1	
C3022-36	ECJ1ZF1C104Z	16V 0.1U	15	
C3037	F2G0J331A015	6.3V 330U	1	
C3038,39	ECJ1ZF1C104Z	16V 0.1U	2	
C3051	ECJ1VC1H220J	50V 22P	1	
C3061-74	ECJ1ZF1C104Z	16V 0.1U	14	
C3110	EEE0JA101SP	6.3V 100U	1	
C4207-10	ECJ1ZF1C104Z	16V 0.1U	4	
C4211	F3F1A1060002	10V 10U	1	
C4215	ECJ1ZF1C104Z	16V 0.1U	1	
C4216	F2G0J101A015	6.3V 100U	1	
C4217	ECJ1ZF1C104Z	16V 0.1U	1	
C4219,20	F3F1A1060002	10V 10U	2	
C4222,23	F2G0J331A015	6.3V 330U	2	
C4234-37	ECJ1ZF1C104Z	16V 0.1U	4	
C5101	EEVHB1C100R	16V 10U	1	
C5102,03	ECJ1VF1C104Z	16V 0.1U	2	
C5111	EEVHB0J470R	6.3V 47U	1	
C5115	EEVHB0J470R	6.3V 47U	1	
C5123	ECJ1VF1C104Z	16V 0.1U	1	
C5151	ECJ1VF1C104Z	16V 0.1U	1	
C5152	F3K1A1060001	10V 10U	1	
C5201,02	EEE1CA100SR	16V 10U	2	
C5203-05	ECJ1ZF1C104Z	16V 0.1U	3	
C5221	ECJ1ZF1C104Z	16V 0.1U	1	
C5232-34	ECJ1ZF1C104Z	16V 0.1U	3	
C5235,36	ECJ1VB1C104K	16V 0.1U	2	
C5254	ECJ1VB1H391K	50V 390P	1	
C5256	ECJ1VB1H222K	50V 2200P	1	
C5262	ECJ1VC1H181J	50V 180P	1	
C5264	ECJ1VB1C183K	16V 0.018U	1	
C5271	ECJ1VB1H102K	50V 1000P	1	
C5272	ECJ1VB1A224K	10V 0.22U	1	
C5273	ECJ1VB1H182K	50V 1800P	1	
C5274	ECJ1VB1C104K	16V 0.1U	1	
C5282	ECJ1VB1H103K	50V 0.01U	1	
C5283	ECJ1VC1H561J	50V 560P	1	
C5290	ECJ1VB1H102K	50V 1000P	1	
C5291	ECJ1VB1H272K	50V 2700P	1	
C5292	ECJ1VC1H101J	50V 100P	1	
C5299	ECJ1VC1H331J	50V 330P	1	
C6201	EEE0JA330WR	6.3V 33U	1	
C6202-06	ECJ1ZF1C104Z	16V 0.1U	5	
C6211	ECJ1VC1H101J	50V 100P	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C6215	ECJ1VB1C104K	16V 0.1U	1	
C6221-23	ECJ1ZF1C104Z	16V 0.1U	3	
C6251-53	F3F1A1060002	10V 10U	3	
C6254,55	ECJ1ZF1C104Z	16V 0.1U	2	
C6256	ECJ1VB1C104K	16V 0.1U	1	
C6257	EEE0JA101SP	6.3V 100U	1	
C6301,02	ECJ1ZF1C104Z	16V 0.1U	2	
C6503	ECJ1VC1H120J	50V 12P	1	
C6505	ECJ1VC1H150J	50V 15P	1	
C6561	EEE0GA470SR	4V 47U	1	
C6563	EEE0GA470SR	4V 47U	1	
C6564	ECJ1ZF1C104Z	16V 0.1U	1	
C6566	ECJ1ZF1C104Z	16V 0.1U	1	
C6568	ECJ1ZF1C104Z	16V 0.1U	1	
CN1	K1MN14A00049	CONNECTOR(14P)	1	
CN2	K1MN17B00037	CONNECTOR(17P)	1	
CN3	RJS1A6714-Q	CONNECTOR(14P)	1	K1MN14B00054
CN301	K1MN26B00045	CONNECTOR(26P)	1	
CN501	K1MN15B00057	CONNECTOR(15P)	1	
D1	GP1S94	PHOTO COUPLER	1	
D2	B0BA4R600003	DIODE	1	
D3	B0JCPC000004	DIODE	1	
D4	MA2J11100L	DIODE	1	
D6	MA2J11100L	DIODE	1	
D7	MA2J72800L	DIODE	1	
D8	MA2J11100L	DIODE	1	
D10	MA2J11100L	DIODE	1	
D11	MAZ80910ML	DIODE	1	
D12,13	MA2J11100L	DIODE	2	
D14	MAZ80820ML	DIODE	1	
D17,18	MA2J11100L	DIODE	2	
D301	MA2J11100L	DIODE	1	
D302-04	B0AAMM000009	DIODE	3	
D305-07	MA2J11100L	DIODE	3	
D401-06	MA2J11100L	DIODE	6	
D601,02	B3ADA0000083	LED	2	
D603-07	LNJ301MPUJAD	LED	5	
D608	B3AHA0000012	LED	1	
D801-06	MA2J11100L	DIODE	6	
D2001	MA2J72800L	DIODE	1	
D5151	MA2J72800L	DIODE	1	
D6215	MA2J72800L	DIODE	1	
E1	RSC0540-1	GROUND PLATE	1	
FL4201	F1H0J1050018	CHIP FILTER	1	
FL6251	F1H0J1050018	CHIP FILTER	1	
FL6253,54	F1H0J1050018	CHIP FILTER	2	
FL6255	F1J1E1040022	CHIP FILTER	1	
FP2501	K1MN04B00036	CONNECTOR(4P)	1	
FP3202	K1MN17B00041	CONNECTOR(17P)	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
FP3203	K1MN15B00037	CONNECTOR(15P)	1	
FP4202	K1MN26B00037	CONNECTOR(26P)	1	
FP5101	K1MN30B00098	CONNECTOR(30P)	1	
FP5102	K1MN50B00010	CONNECTOR(50P)	1	
FP5201	K1MN50B00010	CONNECTOR(50P)	1	
IC1	C0GAM0000005	IC	1	
IC2	C0DBAJG00002	IC	1	
IC3	C0CAADG00019	IC	1	
IC4	C0CAADE00007	IC	1	
IC401	C2BBFD000402	IC	1	
IC501	C9ZB00000431	IC	1	
IC601	C0ZBZ0000040	IC	1	
IC801	C0JBAS000138	IC	1	
IC802-04	C0ABBB000125	IC	3	
IC805	C0ABBB000210	IC	1	
IC891	C0JBAR000292	IC	1	
IC2001	MN103S26EGA	IC	1	
IC2101	C0JBAS000116	IC	1	
IC2501	C0GBG0000033	IC	1	
IC3001	MN6775511	IC	1	
IC3061,62	C3ABPG000102	IC	2	
IC4211	C0FBBK000036	IC	1	
IC5201	AN22030A-VT	IC	1	
IC6201	MN102H60GFD	IC	1	
IC6211	C0EBE0000070	IC	1	
IC6221	C3EBGC000033	IC	1	
IC6222,23	C0JBAA000001	IC	2	
IC6251	C0DBEZG00011	IC	1	
IC6252	C0DBFFG00004	IC	1	
IC6253	C0DBCGE00002	IC	1	
IC6301	RFKFMA66M320	IC	1	
IC6561	C1DB00000582	IC	1	
JK1	K1FA220B0006	SYSTEM CONNECTOR(20P)	1	
JK501	K1U208B00003	JK,VIDEO OUT	1	
K2004	ERJ3GEY0R00Z	1/16W 0	1	
K3002,03	ERJ3GEY0R00Z	1/16W 0	2	
K3007	ERJ3GEY0R00Z	1/16W 0	1	
K3009	ERJ3GEY0R00Z	1/16W 0	1	
K3011	ERJ3GEY0R00Z	1/16W 0	1	
K3101	ERJ3GEY0R00Z	1/16W 0	1	
K3106	ERJ3GEY0R00Z	1/16W 0	1	
K4202-05	ERJ3GEY0R00Z	1/16W 0	4	
K4207	ERJ3GEYJ470V	1/16W 47	1	
K6201	ERJ3GEY0R00Z	1/16W 0	1	
K6301	ERJ3GEY0R00Z	1/16W 0	1	
K6303	ERJ3GEY0R00Z	1/16W 0	1	
L1	G0A200D00002	COIL	1	⚠
L2	G0ZZ00001930	COIL	1	
L4	G0A200D00002	COIL	1	⚠

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
L501,02	G0BYYYY00016	COIL	2	
L503	ELJFCR68KF	COIL	1	
L2001,02	G1C100K00020	COIL	2	
L2021	G1C100K00020	COIL	1	
L3001	G1C100K00020	COIL	1	
L3091	G1C100K00020	COIL	1	
L4211	G1C220KA0038	COIL	1	
L5101	ELJEA100KF	COIL	1	
L5201,02	G1C100K00020	COIL	2	
L6561,62	G1C220KA0038	COIL	2	
LB3001,02	J0JHC0000045	COIL	2	
LB3201-03	ERJ3GEYJ101	1/16W 100	3	D0GB101JA002
LB3205,06	J0JBC0000015	COIL	2	
LB4200	J0JBC0000015	COIL	1	
LB4201	J0JCC0000119	COIL	1	
LB4207-12	J0JCC0000119	COIL	6	
LB4214,15	ERJ3GEY0R00Z	1/16W 0	2	
LB5101	J0JHC0000045	COIL	1	
LB5105,06	J0JBC0000015	COIL	2	
LB5202,03	J0JHC0000045	COIL	2	
LB5205-10	J0JBC0000015	COIL	6	
LB5213	J0JBC0000015	COIL	1	
LB5217-19	J0JBC0000015	COIL	3	
LB5221-24	J0JCC0000119	COIL	4	
LB5225	J0JBC0000015	COIL	1	
LB5226	J0JCC0000119	COIL	1	
LB5227	J0JBC0000015	COIL	1	
LB5228-31	J0JCC0000119	COIL	4	
LB5232	J0JBC0000015	COIL	1	
LB5233	J0JCC0000119	COIL	1	
LB5235-38	J0JCC0000119	COIL	4	
LB5239,40	J0JBC0000015	COIL	2	
LB6201	J0JBC0000015	COIL	1	
LB6202	J0JCC0000119	COIL	1	
LB6221	J0JBC0000015	COIL	1	
LB6561	J0JBC0000015	COIL	1	
LB6562,63	J0JCC0000119	COIL	2	
LB6564	ERJ3GEYJ470V	1/16W 47	1	
LB6565	J0JCC0000077	COIL	1	
LB6566	J0JCC0000119	COIL	1	
LB6567	J0JBC0000015	COIL	1	
PCB1	REP3384G-N	DVD MODULE P.C.B.	1	[RTL]
PCB2	REP3513B-M	MAIN P.C.B.	1	[RTL](GN)
PCB2	REP3513C-M	MAIN P.C.B.	1	[RTL](EE)
PCB3	REP2578A-N	LOADING MOTOR P.C.B.	1	[RTL]
PCB4	REP3406A-1N	TERMINAL P.C.B.	1	[RTL]
PCB5	REP3383A	FG P.C.B.	1	[RTL]
PS6201	K1MN10A00030	CONNECTOR(10P)	1	
Q1	B1GACFGG0004	TRANSISTOR	1	
Q3	B1GBCFJJ0007	TRANSISTOR	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
Q6	FMW1T98	TRANSISTOR	1	
Q7	2SB14170JA	TRANSISTOR	1	
Q8	FMW1T98	TRANSISTOR	1	
Q9	2SB14170JA	TRANSISTOR	1	
Q11	FMW1T98	TRANSISTOR	1	
Q12	2SB14170JA	TRANSISTOR	1	
Q13	2SB1218A	TRANSISTOR	1	
Q14	FMW1T98	TRANSISTOR	1	
Q15	2SB0766A0L	TRANSISTOR	1	
Q16	2SD08740WL	TRANSISTOR	1	
Q303	B1GBCFJJ0007	TRANSISTOR	1	
Q304	2SB0621AHA	TRANSISTOR	1	
Q305	UNR521N00L	TRANSISTOR	1	
Q307,08	B1GBCFJJ0007	TRANSISTOR	2	
Q401	UNR521400L	TRANSISTOR	1	
Q402-04	2SD1819A0L	TRANSISTOR	3	
Q501	B1GBCFJJ0007	TRANSISTOR	1	
Q801-06	2SD132800L	TRANSISTOR	6	
Q807	UNR511100L	TRANSISTOR	1	
Q891	B1GBCFJJ0007	TRANSISTOR	1	
Q2001	2SD1819A0L	TRANSISTOR	1	
Q5111	B1BDBF000004	TRANSISTOR	1	
Q5115	B1BDBF000004	TRANSISTOR	1	
Q5271	UN5211	TRANSISTOR	1	UNR5211
Q6215	UNR521200L	TRANSISTOR	1	
QR5221	UNR212100L	TRANSISTOR	1	
QR5241	UNR511M00L	TRANSISTOR	1	
R1	ERDS2FJ102	1/4W 1K	1	
R2	ERJ3GEYJ822V	1/16W 8.2K	1	D0GB822JA002
R3	ERJ3GEYJ222V	1/16W 2.2K	1	
R4	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R16	ERJ3GEYJ471V	1/16W 470	1	
R17	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R20	ERJ3GEYJ151V	1/16W 150	1	
R21,22	ERJ3GEYJ222V	1/16W 2.2K	2	
R27	ERJ6GEYJ122V	1/10W 1.2K	1	
R28	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R29	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R30	ERJ3GEYJ101	1/16W 100	1	D0GB101JA002
R31	ERJ6GEYJ681V	1/10W 680	1	
R32	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R33	ERJ3GEYJ472V	1/16W 4.7K	1	
R34	ERJ3GEYJ471V	1/16W 470	1	
R35	ERJ6GEYJ122V	1/10W 1.2K	1	
R36	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R37	ERJ3GEYJ101	1/16W 100	1	D0GB101JA002
R38	ERD2FCG100	1/4W 10	1	
R39	ERJ3GEYJ102V	1/16W 1K	1	
R40	ERJ3GEY0R00V	1/16W 0	1	
R41,42	ERJ3GEYJ101	1/16W 100	2	D0GB101JA002
R43	ERQ16NKWR33E	1/6W 0.33	1	
R44	ERJ3GEYJ122	1/16W 1.2K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R305,06	ERJ3GEYJ103V	1/16W 10K	2	D0GB103JA002
R307	ERJ3GEYJ102V	1/16W 1K	1	
R308	ERJ3GEYJ221V	1/16W 220	1	
R312	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R314	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R401	ERJ3GEYJ681V	1/16W 680	1	D0GB681JA002
R402	ERJ3GEYJ104	1/16W 100K	1	
R403	ERJ3GEYJ472V	1/16W 4.7K	1	
R404	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R405	ERJ3GEYJ471V	1/16W 470	1	
R406	ERJ3GEYJ472V	1/16W 4.7K	1	
R407	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R408	ERJ3GEYJ472V	1/16W 4.7K	1	
R409	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R410,11	ERJ3GEYJ472V	1/16W 4.7K	2	
R412	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R413	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R414	ERJ3GEYJ221V	1/16W 220	1	
R415	ERJ3GEYJ472V	1/16W 4.7K	1	
R416	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R417	ERJ3GEYJ102V	1/16W 1K	1	
R418	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R419	ERJ3GEYJ102V	1/16W 1K	1	
R420	ERJ3GEYJ472V	1/16W 4.7K	1	
R421	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R422-24	ERJ3GEYJ472V	1/16W 4.7K	3	
R425,26	ERJ3GEYJ103V	1/16W 10K	2	D0GB103JA002
R427	ERJ3GEYD153V	1/16W 15K	1	D0HB153ZA002 (EE)
R427	ERJ3GEYJ682V	1/16W 6.8K	1	D0GB682JA002 (GN)
R428	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R429-32	ERJ3GEYJ101	1/16W 100	4	D0GB101JA002
R433-35	ERJ3GEYJ221V	1/16W 220	3	
R436	ERJ3GEYJ472V	1/16W 4.7K	1	
R438,39	ERJ3GEYJ821V	1/16W 820	2	
R440-42	ERJ3GEYJ102V	1/16W 1K	3	
R443	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R444	ERJ3GEYJ104	1/16W 100K	1	
R445	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R446	ERJ3GEYJ472V	1/16W 4.7K	1	
R447,48	ERJ3GEYJ221V	1/16W 220	2	
R450,51	ERJ3GEYJ103V	1/16W 10K	2	D0GB103JA002
R452	ERJ3GEYJ821V	1/16W 820	1	
R454,55	ERJ3GEYJ472V	1/16W 4.7K	2	
R456	ERJ3GEYJ222V	1/16W 2.2K	1	
R501,02	ERJ3GEYJ1R0V	1/16W 1	2	
R503	ERJ3EKF75R0	1/16W 75	1	
R504,05	ERJ3GEYJ1R0V	1/16W 1	2	
R506,07	ERJ3EKF75R0	1/16W 75	2	
R508-10	ERJ3GEYJ104	1/16W 100K	3	
R512	ERJ3GEYJ822V	1/16W 8.2K	1	D0GB822JA002
R513	ERJ3GEYJ222V	1/16W 2.2K	1	
R601-04	ERJ3GEYJ101	1/16W 100	4	D0GB101JA002
R605,06	ERJ3GEYJ271V	1/16W 270	2	
R607-11	ERJ3GEYJ221V	1/16W 220	5	

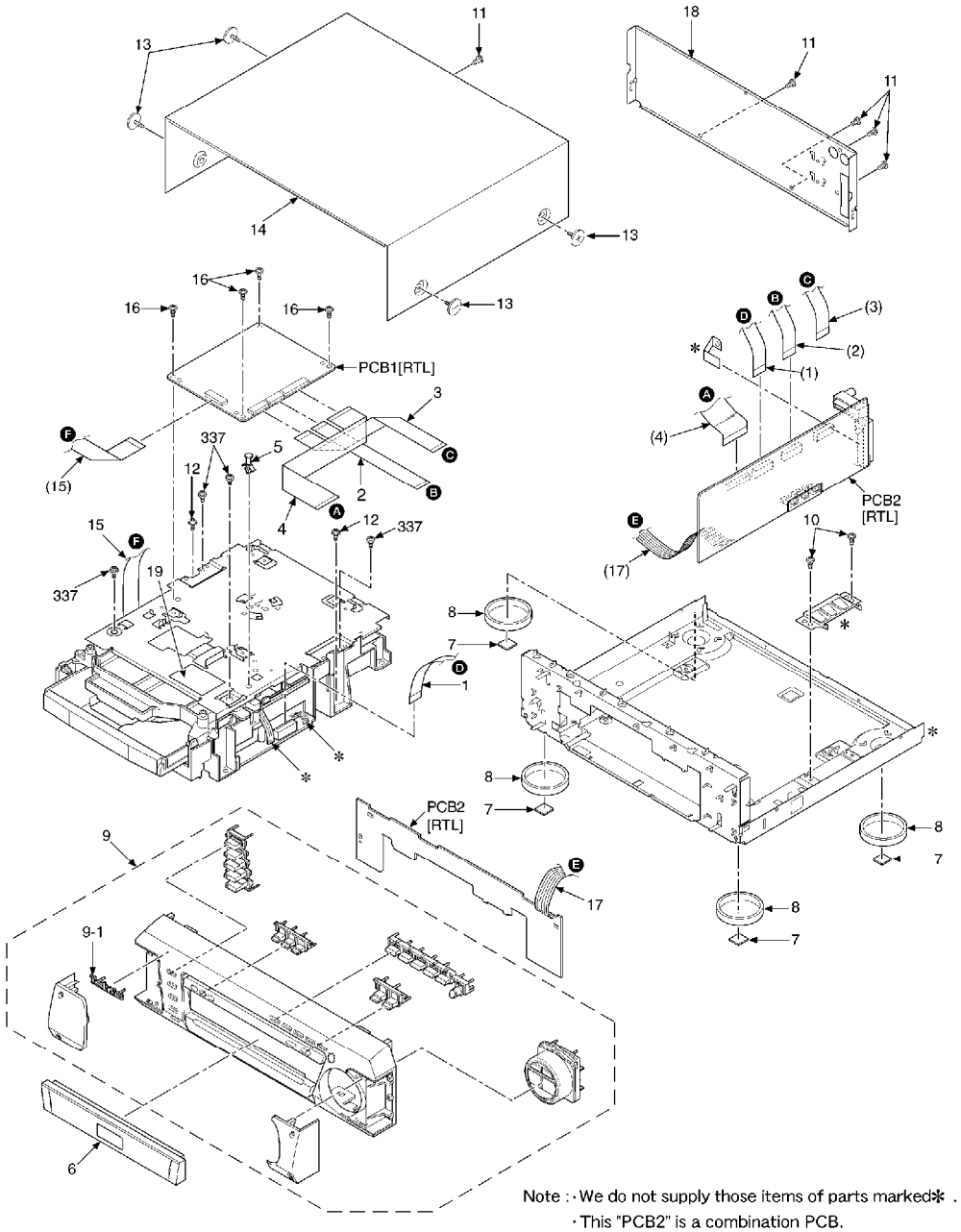
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R612	ERJ3GEYJ181V	1/16W 180	1	
R613	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R614	ERJ3GEYJ123V	1/16W 12K	1	
R615	ERJ3GEYJ682V	1/16W 6.8K	1	D0GB682JA002
R616	ERJ3GEYJ472V	1/16W 4.7K	1	
R617	ERJ3GEYJ332V	1/16W 3.3K	1	D0GB332JA002
R618	ERJ3GEYJ222V	1/16W 2.2K	1	
R619	ERJ3GEYJ182V	1/16W 1.8K	1	
R620	ERJ3GEYJ152V	1/16W 1.5K	1	
R621	ERJ3GEYJ122	1/16W 1.2K	1	
R622	ERJ3GEYJ102V	1/16W 1K	1	
R623	ERJ3GEYJ123V	1/16W 12K	1	
R624	ERJ3GEYJ682V	1/16W 6.8K	1	D0GB682JA002
R625	ERJ3GEYJ472V	1/16W 4.7K	1	
R626	ERJ3GEYJ332V	1/16W 3.3K	1	D0GB332JA002
R627	ERJ3GEYJ222V	1/16W 2.2K	1	
R628	ERJ3GEYJ182V	1/16W 1.8K	1	
R629	ERJ3GEYJ152V	1/16W 1.5K	1	
R630	ERJ3GEYJ122	1/16W 1.2K	1	
R631	ERJ3GEYJ102V	1/16W 1K	1	
R801	ERJ3GEYJ102V	1/16W 1K	1	
R802	ERJ3GEYJ182V	1/16W 1.8K	1	
R803,04	ERJ3GEYJ104	1/16W 100K	2	
R805,06	ERJ3GEYJ103V	1/16W 10K	2	D0GB103JA002
R807,08	ERJ3GEYJ223V	1/16W 22K	2	D0GB223JA002
R809	ERJ3GEYD153V	1/16W 15K	1	D0HB153ZA002
R810	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R811,12	ERJ3GEYJ103V	1/16W 10K	2	D0GB103JA002
R813,14	ERJ3GEYJ332V	1/16W 3.3K	2	D0GB332JA002
R815	ERJ3GEYJ102V	1/16W 1K	1	
R816	ERJ3GEYJ471V	1/16W 470	1	
R817,18	ERJ3GEYJ473V	1/16W 47K	2	D0GB473JA002
R819-24	ERJ3GEYJ104	1/16W 100K	6	
R825	ERJ3GEYJ122	1/16W 1.2K	1	
R826	ERJ3GEYJ562V	1/16W 5.6K	1	D0GB562JA002
R827,28	ERJ3GEYJ101	1/16W 100	2	D0GB101JA002
R829,30	ERJ3GEYJ104	1/16W 100K	2	
R831,32	ERJ3GEYD153V	1/16W 15K	2	D0HB153ZA002
R833,34	ERJ3GEYJ223V	1/16W 22K	2	D0GB223JA002
R835,36	ERJ3GEYJ103V	1/16W 10K	2	D0GB103JA002
R837,38	ERJ3GEYD153V	1/16W 15K	2	D0HB153ZA002
R839,40	ERJ3GEYJ332V	1/16W 3.3K	2	D0GB332JA002
R841,42	ERJ3GEYJ102V	1/16W 1K	2	
R843,44	ERJ3GEYJ473V	1/16W 47K	2	D0GB473JA002
R845,46	ERJ3GEYJ104	1/16W 100K	2	
R847,48	ERJ3GEYJ102V	1/16W 1K	2	
R849,50	ERJ3GEYJ104	1/16W 100K	2	
R851,52	ERJ3GEYJ103V	1/16W 10K	2	D0GB103JA002
R853,54	ERJ3GEYJ223V	1/16W 22K	2	D0GB223JA002
R855,56	ERJ3GEYJ103V	1/16W 10K	2	D0GB103JA002
R857,58	ERJ3GEYD153V	1/16W 15K	2	D0HB153ZA002
R859,60	ERJ3GEYJ332V	1/16W 3.3K	2	D0GB332JA002
R861,62	ERJ3GEYJ102V	1/16W 1K	2	
R863,64	ERJ3GEYJ473V	1/16W 47K	2	D0GB473JA002

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R865,66	ERJ3GEYJ104	1/16W 100K	2	
R867	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R891,92	ERJ3GEYJ104	1/16W 100K	2	
R893	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R899	ERJ3GEY0R00V	1/16W 0	1	
R2021	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R2022,23	ERJ3GEYJ752V	1/16W 7.5K	2	
R2025,26	ERJ3GEYJ223V	1/16W 22K	2	D0GB223JA002
R2027,28	ERJ3GEYJ563V	1/16W 56K	2	
R2029	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R2030	ERJ3GEYJ102V	1/16W 1K	1	
R2031	MCR03PZHJ561	1/16W 560	1	
R2032	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R2033	ERJ3GEYJ472V	1/16W 4.7K	1	
R2034	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R2035	ERJ3GEYJ272V	1/16W 2.7K	1	
R2036	ERJ3GEY0R00Z	1/16W 0	1	
R2037	ERJ3GEYJ683V	1/16W 68K	1	D0GB683JA002
R2038	ERJ3GEYD153V	1/16W 15K	1	D0HB153ZA002
R2039	ERJ3GEYJ105V	1/16W 1M	1	
R2040,41	ERJ3GEYJ822V	1/16W 8.2K	2	D0GB822JA002
R2042-47	ERJ3GEYD153V	1/16W 15K	6	D0HB153ZA002
R2048	ERJ3GEYJ475V	1/16W 4.7M	1	
R2049	ERJ3GEYJ102V	1/16W 1K	1	
R2051,52	ERJ3GEYJ101	1/16W 100	2	D0GB101JA002
R2053,54	ERJ3GEYJ473V	1/16W 47K	2	D0GB473JA002
R2501	ERJ3GEYJ101	1/16W 100	1	D0GB101JA002
R2502,03	ERJ3GEYD153V	1/16W 15K	2	D0HB153ZA002
R2504,05	ERJ3GEYJ823V	1/16W 82K	2	D0GB823JA002
R2507	ERJ6GEYJ6R8V	1/8W 6.8	1	
R3001	ERJ3GEYJ220V	1/16W 22	1	
R3006	ERJ3RBD153	1/16W 15K	1	
R3007	ERJ3RBD202	1/16W 2K	1	
R3008	ERJ3RBD132V	1/16W 1.3K	1	
R3009,10	ERJ3GEYJ101	1/16W 100	2	D0GB101JA002
R3051,52	ERJ3GEYJ101	1/16W 100	2	D0GB101JA002
R3101	ERJ3RED620V	1/16W 62	1	
R3102	ERJ3RED150V	1/16W 15	1	
R3106	ERJ3RED620V	1/16W 62	1	
R3107	ERJ3RED180	1/16W 18	1	
R5101-03	ERJ3GEYJ560V	1/16W 56	3	
R5105	ERJ12Y0R00U	1/12W 0	1	
R5107-09	ERJ3GEY0R00V	1/16W 0	3	
R5111	ERJ3GEYJ2R2V	1/16W 2.2	1	D0GB2R2JA002
R5112	ERJ12YJ270H	1/2W 27	1	
R5113	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R5114	ERJ3GEYJ223V	1/16W 22K	1	D0GB223JA002
R5115	ERJ3GEYJ2R2V	1/16W 2.2	1	D0GB2R2JA002
R5116	ERJ12YJ270H	1/2W 27	1	
R5117	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R5120	ERJ3GEY0R00V	1/16W 0	1	
R5121-23	ERJ3GEYJ560V	1/16W 56	3	
R5124	ERJ3GEYJ472V	1/16W 4.7K	1	
R5152	ERJ3GEYJ102V	1/16W 1K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R5201	ERJ3GEY0R00Z	1/16W 0	1	
R5203	ERJ3GEY0R00Z	1/16W 0	1	
R5204	ERJ3GEYJ102V	1/16W 1K	1	
R5221	ERJ3GEY0R00Z	1/16W 0	1	
R5231,32	ERJ3GEYJ822V	1/16W 8.2K	2	D0GB822JA002
R5241	ERJ3GEYJ221V	1/16W 220	1	
R5242	ERJ3GEYJ823V	1/16W 82K	1	D0GB823JA002
R5257	ERJ3GEY0R00Z	1/16W 0	1	
R5262	ERJ3GEY0R00Z	1/16W 0	1	
R5281	ERJ3GEYJ105V	1/16W 1M	1	
R5294	ERJ3GEYJ123V	1/16W 12K	1	
R5295	D0GB243JA002	1/16W 24K	1	
R5320	ERJ3GEY0R00Z	1/16W 0	1	
R6201	ERJ3GEYJ473V	1/16W 47K	1	D0GB473JA002
R6202	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R6206	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R6207,08	ERJ3GEYJ472V	1/16W 4.7K	2	
R6210	ERJ3GEYJ101	1/16W 100	1	D0GB101JA002
R6211	ERJ3GEYJ472V	1/16W 4.7K	1	
R6215	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R6216	ERJ3GEYJ102V	1/16W 1K	1	
R6251,52	ERJ3RBD101	1/16W 100	2	ERJ3RBD101V
R6253	ERJ3RBD102V	1/16W 1K	1	
R6503	ERJ3RBD331	1/16W 330	1	
R6504,05	ERJ3GEY0R00Z	1/16W 0	2	
R6563	ERJ3GEYJ103V	1/16W 10K	1	D0GB103JA002
R6565	ERJ3GEYJ470V	1/16W 47	1	
R6566	ERJ3GEYJ100	1/16W 10	1	
RA2021	EXBV4V102JV	1/32W 1K	1	
RA2022	EXBV4V472JV	1/32W 4.7K	1	
RA2501	EXBV8V473JV	1/16W 47K	1	
RA3001	EXBV4V102JV	1/32W 1K	1	
RA3002-12	EXBV8V820J	1/16W 82	11	
RA3013	EXBV4V220JV	1/32W 22	1	
RA3051	EXBV4V101JV	1/32W 100	1	
RA3053	EXBV4V101JV	1/32W 100	1	
RA5101	EXBV4V560J	1/32W 56	1	
RA5102	EXBV8V560JV	1/16W 56	1	
RA5103	EXBV4V560J	1/32W 56	1	
RA5201	EXBV8V101JV	1/16W 100	1	
RA6201,02	EXBV4V103JV	1/32W 10K	2	
RA6203	EXBV4V472JV	1/32W 4.7K	1	
RA6204	EXBV4V103JV	1/32W 10K	1	
RA6205	EXBV8V103J	1/16W 10K	1	
RA6206	EXBV4V473JV	1/32W 47K	1	
S1,S2	RSH1A032-U	SW,TRAY POSITION DET.	2	K0F111B00057
S3	RSH1A005	SW,OPEN/CLOSE DET.	1	
S4	RSH1A91ZA-A	SW,CLAMP	1	K0L1BA000007
S5	K0L1BB000005	SW,BOTTOM	1	
S601-21	EVQ11G05R	SW,OPERATION	21	
S2501	RSH1A048-A	SW,REST DET.	1	

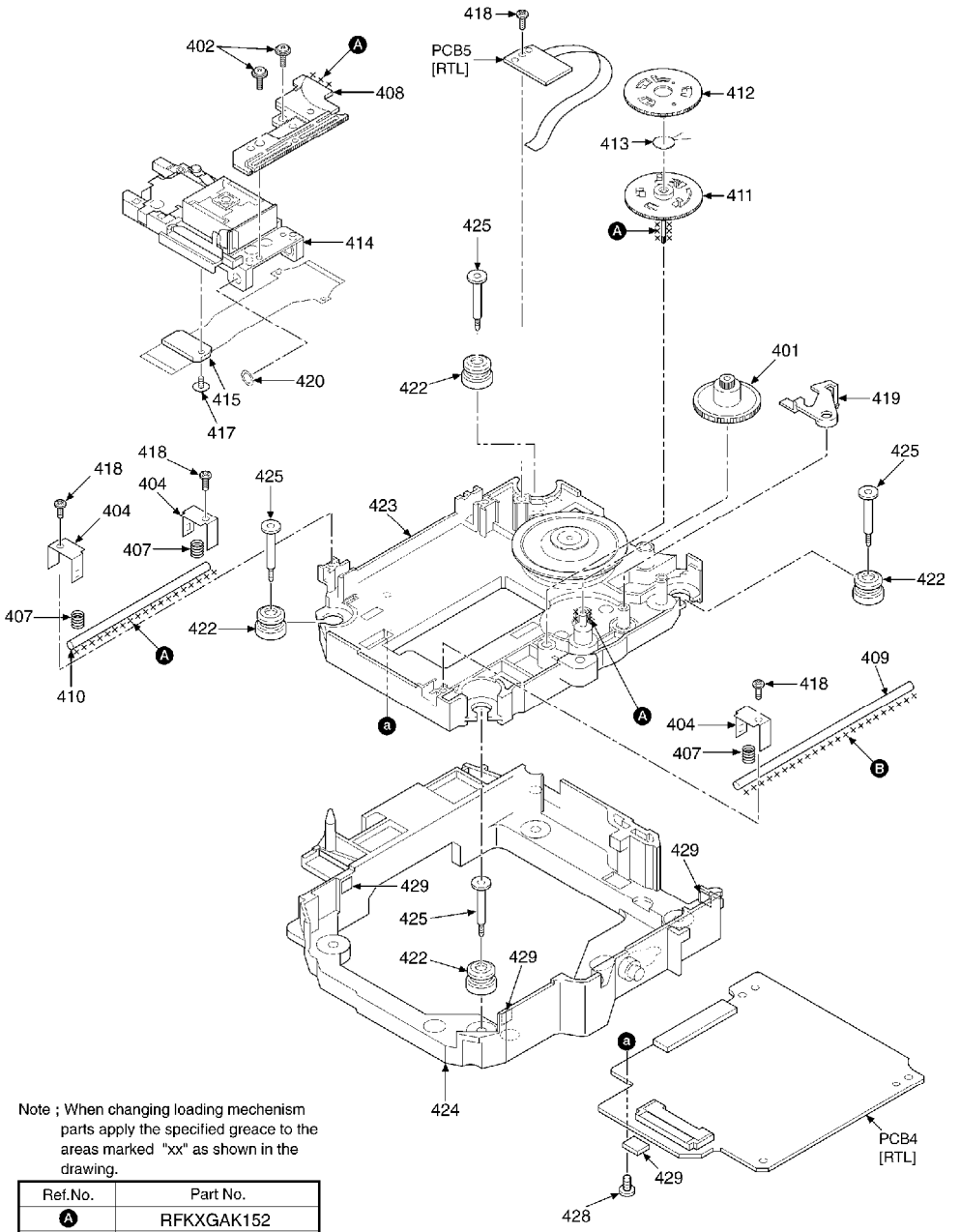
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
SJ313	ERJ3GEY0R00V	1/16W 0	1	
X401	H2B800400005	OSCILLATOR	1	
X6501	H0J368600005	OSCILLATOR	1	
Z501-03	J0JBC0000015	COIL	3	

19. Cabinet parts Location



Note : · We do not supply those items of parts marked✻ .
· This "PCB2" is a combination PCB.

20. Loading Mechanism Parts Location

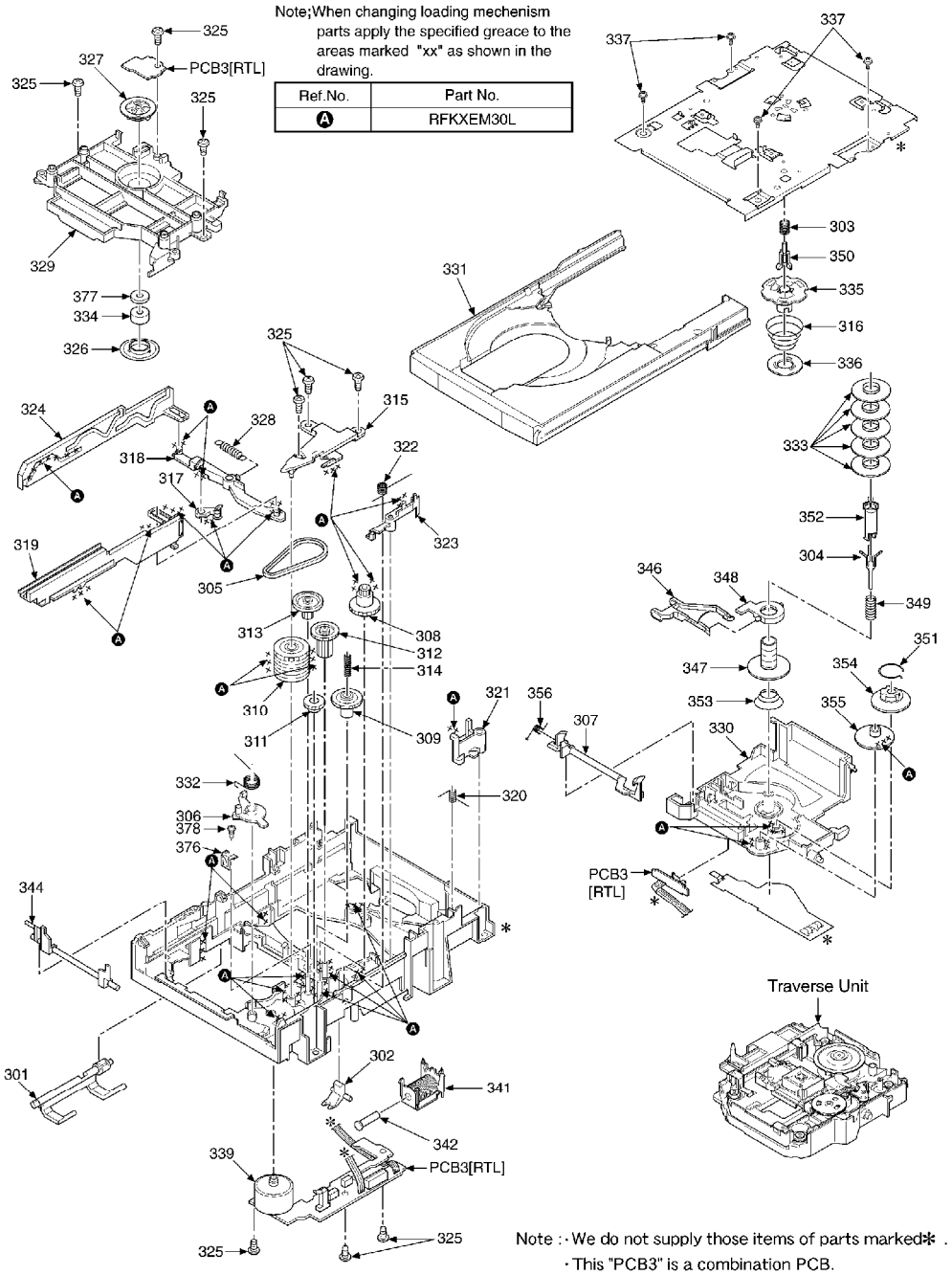


Note ; When changing loading mechenism parts apply the specified greace to the areas marked "xx" as shown in the drawing.

Ref.No.	Part No.
Ⓐ	RFKXGAK152
Ⓑ	RFKXPG641

Note : ･We do not supply those items of parts marked✻ .

21. Traverse Mechanism Parts Location


Note;When changing loading mechenism parts apply the specified greace to the areas marked "xx" as shown in the drawing.
Ref.No. | Part No.
A | RFKXEM30L
Traverse Unit
Note : · We do not supply those items of parts marked✻ .
· This "PCB3" is a combination PCB.

22. Schematic Diagram for printing with A4 size

K0305 YH/HM

SCHEMATIC DIAGRAM–4

B DVD MODULE(AVDEC) CIRCUIT

:POSITIVE VOLTAGE LINE :AUDIO/VIDEO SIGNAL LINE :AUDIO SIGNAL LINE :VIDEO SIGNAL LINE

To B DVD MODULE (VIDEO DAC) CIRCUIT on SCHEMATIC DIAGRAM-5/1-G — DB2 D+1.5V, DG1 D.GND

To B DVD MODULE (VIDEO DAC) CIRCUIT on SCHEMATIC DIAGRAM-5/1-D — DB1 D+3.3V, DG1 D.GND

To B DVD MODULE (CPU) CIRCUIT on SCHEMATIC DIAGRAM-7/1-H — FS18 NRST

To B DVD MODULE (CPU) CIRCUIT on SCHEMATIC DIAGRAM-7/1-G — CD1 AV1IRQ, CD2 AV2IRQ, SC27 WAIT, CD3 NWEH, SC29 NWEL

SCHEMATIC DIAGRAM-7/1-E,F — SC28 NRD, CD4 NAVCS

SCHEMATIC DIAGRAM-7/1-D — CD5 SYSCLK

To B DVD MODULE (CPU) CIRCUIT on SCHEMATIC DIAGRAM-7/12-D — SC10 CPUADR1 … SC26 CPUADR17

To B DVD MODULE (CPU) CIRCUIT on SCHEMATIC DIAGRAM-7/12-A,B — SC1 CPUDT0 … SD10 STVALID, SD11 STCLK, SD1 STENABLE

To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/12-H — SD9 STD7 … SD2 STD0

LB3001 J0JHC0000045 — C3002 6.3V330

LB3002 J0JHC0000045 — C3001 6.3V330

C3005 0.1, C3003 0.1

RA3001 1K

RA3002 82 — MDQ5, MDQ10, MDQ4, MDQ11

RA3003 82 — MDQ3, MDQ12, MDQ2, MDQ13

RA3004 82 — MDQ1, MDQ14, MDQ0, MDQ15

K3002 0 Ω

C3006 0.1, C3004 0.1, C3007 0.1, C3008 0.1, C3009 0.1

RA3012 82 — MDQ9, MDQ6, MDQ8, MDQ7

RA3013 22 — DQM0, DQM1

RA3011 82 — MA9, MA11, MA8, MA10

RA3010 82 — CLK

RA3009 82 — MA7, MA0, MA6, MA1

RA3008 82 — MA5, MA2, MA4, MA3

RA3007 82 — DQM2, DQM3

RA3006 82 — MDQ16, MDQ31, MDQ17, MDQ30

RA3005 82 — MDQ18, MDQ29, MDQ19, MDQ28

RA3006 82 — MDQ20, MDQ27, MDQ21, MDQ26

R3001 22

C3034 0.1, C3031 0.1, C3030 0.1

C3036 0.1, C3035 0.1, C3032 0.1, C3033 0.1, C3025 0.1, C3027 0.1, C3028 0.1, C3029 0.1

IC3001 MN6775511 AV DECODER

C3010 0.1, C3011 0.1, C3012 0.1, C3013 0.1, C3014 0.1, C3015 0.1, C3016 0.1, C3017 0.1

R3010 100

C3026 0.1, C3024 0.1, K3003 0 Ω

L3001 10 μ H — C3037 6.3V330

C3038 0.1, C3039 0.1, K3007 0 Ω

R3006 15K, C3022 0.1

C3021 1, R3007 2K, C3019 1

R3008 1.3K, C3023 0.1, C3020 0.1, C3018 0.1

R3101 82, R3102 82, R3107 82, R3106 82

K3106 0 Ω, K3101 0 Ω

C3110 6.3V100, L3091 10 μ H

To B DVD MODULE (VIDEO DAC) CIRCUIT on SCHEMATIC DIAGRAM-5/12-D — C VD5, Y VD4, V.GND VG1

SCHEMATIC DIAGRAM-5/1-F — A+5V AB1, A.GND AG1

To B DVD MODULE (AUDIO DAC) CIRCUIT on

SCHEMATIC DIAGRAM-6/1-C — CLK27M AD2, CLK54M AD10

SCHEMATIC DIAGRAM-6/12-A — EXTCLK1 AD1, AOUT2 AD3

SCHEMATIC DIAGRAM-6/1-F — AOUT1 AD4, AOUT0 AD5

SCHEMATIC DIAGRAM-6/1-H — DMIXOUT AD6

SCHEMATIC DIAGRAM-6/1-F — SRCK AD7, LRCK AD8

SCHEMATIC DIAGRAM-6/12-E — AUDIO DIGITAL AD9

K3009 0 Ω, K3011 0 Ω, R3052 100, RA3053 100, R3051 100, RA3051 100, R3009 100, C3051 22P

IC3062 C3ABPG000121 MEMORY

IC3061 C3ABPG000121 MEMORY

C3068 0.1, C3069 0.1, C3071 0.1, C3073 0.1, C3074 0.1

C3070 0.1, C3072 0.1

C3061 0.1, C3062 0.1, C3064 0.1, C3066 0.1, C3067 0.1

C3065 0.1, C3063 0.1

SL-DV290(EE,GN) DVD MODULE(AVDEC) CIRCUIT DIAGRAM

SCHEMATIC DIAGRAM–5

B DVD MODULE(VIDEO DAC) CIRCUIT

:POSITIVE VOLTAGE LINE :VIDEO SIGNAL LINE

To B DVD MODULE (FEP) CIRCUIT on SCHEMATIC DIAGRAM-2/12-G — MB1 M+9V, MG1 M.GND

To B DVD MODULE (CPU) CIRCUIT on SCHEMATIC DIAGRAM-7/1-A — DB3 D+5V, DG1 D.GND

To B DVD MODULE (FEP) CIRCUIT on SCHEMATIC DIAGRAM-2/12-H — DB3 D+5V, DG1 D.GND

To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/1-G — DB2 D+1.5V, DG1 D.GND

To B DVD MODULE (FEP) CIRCUIT on SCHEMATIC DIAGRAM-2/12-G — AB1 A+5V, AG1 A.GND

To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/12-C — AB1 A+5V, AG1 A.GND

To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/12-E — AB1 A+5V, AG1 A.GND

To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/1-H — DB4 D+1.8V, DG1 D.GND

To B DVD MODULE (FEP) CIRCUIT on SCHEMATIC DIAGRAM-2/12-G — DB1 D+3.3V, DG1 D.GND

To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/1-H — DB1 D+3.3V, DG1 D.GND

To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/1-G — DB1 D+3.3V, DG1 D.GND

To B DVD MODULE (AUDIO DAC) CIRCUIT on SCHEMATIC DIAGRAM-6/1-F — DB1 D+3.3V, DG1 D.GND

To B DVD MODULE (CPU) CIRCUIT on SCHEMATIC DIAGRAM-7/12-H — DB1 D+3.3V, DG1 D.GND

C6257 6.3V100 (+)

IC6251 C0DBEZG00011 REGULATOR — 1.5V OUT, IN 2.5V, R6251 100, R6252 100, 1.3V VR, R6253 1K, ON/OFF, GND; C6251 10V10 (+), C6254 0.1

IC6252 C0DBFFG00004 REGULATOR — 1.8V OUT, IN 2.5V, NC, ON/OFF, GND; C6252 10V10 (+), C6255 0.1

IC6253 C0DBCGE00002 REGULATOR — 3.3V OUT, IN 5V, NC, ON/OFF, GND; C6253 10V10 (+), C6256 0.1

FL6255 VLF1491S104T — 9V

FL6253 F1H0J1050018 — 5V

FL6251 F1H0J1050018 — 2.5V

FL6254 F1H0J1050018 — 5V

FP3202

1	D.GND	17	
2	M+9V	16	
3	M+9V	15	
4	M.GND	14	
5	M.GND	13	
6	D+5V	12	
7	D+5V	11	
8	D.GND	10	
9	D.GND	9	
10	D+2.5V	8	
11	D+2.5V	7	
12	D.GND	6	
13	D.GND	5	
14	A+5V	4	
15	A+5V	3	
16	A.GND	2	
17	A.GND	1	

To C MAIN CIRCUIT(CN2) on SCHEMATIC DIAGRAM–8/11,12-H

LB3203 100; LB3202 100; LB3201 100 — CMD CV4, STATUS CV5, DSPCLK CV6

To B DVD MODULE (CPU) CIRCUIT on SCHEMATIC DIAGRAM-7/1-C

DSPCLK CV6, STATUS CV5, CMD CV4

To B DVD MODULE (AUDIO DAC) CIRCUIT on SCHEMATIC DIAGRAM-6/12-E

C VD5, Y VD4, V.GND VG1

To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/12-C

LB3205 VLP0146-T; LB3206 VLP0146-T

FP3203

1	Y-OUT	15	
2	V.GND	14	
3	C-OUT	13	
4	V.GND	12	
5	YC-OUT/CR/PR/R	11	
6	V.GND	10	
7	CB/ PB/ B	9	
8	V.GND	8	
9	Y/ PY/ G	7	
10	D.GND	6	
11	TRAY REF	5	
12	TRAY DRV	4	
13	TRAY MUT	3	
14	TRV-SW+	2	
15	TRAY/ TRV	1	

To C MAIN CIRCUIT (CN501) on SCHEMATIC DIAGRAM-9/15,16-H

TRV-SW+ VD9

To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/1-C

TRAY/ TRV VD10, TRV-SW+ VD9, MUTE4 VD8, TRAY DRV VD7, TRAY REF VD6

To B DVD MODULE (FEP) CIRCUIT on SCHEMATIC DIAGRAM-2/12-H

SCHEMATIC DIAGRAM–6

B DVD MODULE(AUDIO DAC) CIRCUIT

:POSITIVE VOLTAGE LINE :AUDIO SIGNAL LINE :SURROUND SP. SIGNAL LINE :CENTER SP. SIGNAL LINE :SUB WOOFER SIGNAL LINE

To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/12-A
AD6 DMIXOUT

To B DVD MODULE (CPU) CIRCUIT on SCHEMATIC DIAGRAM-7/12-G
AC1 SBI1
AC2 SBO1
AC3 SBT1
AC4 STBDAC2

To B DVD MODULE (CPU) CIRCUIT on SCHEMATIC DIAGRAM-7/1-H
FS18 NRST

To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/12-A
AD7 SRCK
AD8 LRCK

To B DVD MODULE (VIDEO DAC) CIRCUIT on SCHEMATIC DIAGRAM-5/1-C
DB1 D+3.3V
DG1 D.GND

To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/12-A
AD5 AOUT0
AD4 AOUT1
AD3 AOUT2

To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/12-B
AD10 CLK54M
AD2 CLK27M

IC4211
C0FBBK000036
8ch AUDIO D/A CONVERTER

IC6561
C1DB00000582
CLOCK GENERATOR

FL4201
F1H0J1050018

FP4202

1	SW	26	
2	A.GND	25	
3	CNT	24	
4	A.GND	23	
5	SR	22	
6	A.GND	21	
7	SL	20	
8	A.GND	19	
9	FR	18	
10	A.GND	17	
11	FL	16	
12	A.GND	15	
13	MIX R	14	
14	A.GND	13	
15	MIX L	12	
16	ADAC5V	11	
17	ADAC5V	10	
18	AC3H/DACMUT	9	
19	AMUT	8	
20	ZFLAG	7	
21	D.GND	6	
22	CMD	5	
23	STAT	4	
24	CLK	3	
25	D.GND	2	
26	AUDIO DIGITAL	1	

To C MAIN CIRCUIT (CN301) on SCHEMATIC DIAGRAM–8/9,10-H

To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/12-A
LB4201 VLP0155-T
AUDIO DIGITAL AD9

To B DVD MODULE (VIDEO DAC) CIRCUIT on SCHEMATIC DIAGRAM-5/12-E
DSPCLK CV6
STATUS CV5
CMD CV4

To B DVD MODULE (CPU) CIRCUIT on SCHEMATIC DIAGRAM-7/12-G
AC3H AC6
AMUT AC7
CLK33M AC8
CLKSEL AC5

To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/1-A
CLK16M1 SA1

To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/12-B
EXTCLK1 AD1

SL-DV290(EE,GN) DVD MODULE(AUDIO DAC) CIRCUIT DIAGRAM

SCHEMATIC DIAGRAM–7

B DVD MODULE(CPU) CIRCUIT

:POSITIVE VOLTAGE LINE

To B DVD MODULE (AUDIO DAC) CIRCUIT on SCHEMATIC DIAGRAM-6/1-G (FS18 NRST)
To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/1-F (FS18 NRST)
To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/1-D (FS18 NRST)
To B DVD MODULE (FEP) CIRCUIT on SCHEMATIC DIAGRAM-2/1-B (FS18 NRST)
To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/1-E (CD2 AV2IRQ, CD1 AV1IRQ)
To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/1-G (SC32 ODCIRQ, SC31 ADSCIRQ)
To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/1-G (SC27 WAIT, SC28 NRD, SC29 NWEL, SC30 NSODCCS)
SCHEMATIC DIAGRAM-3/1-E
To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/1-D,E (SC27 WAIT, SC28 NRD, SC29 NWEL, CD3 NWEH, CD4 NAVCS)
To B DVD MODULE (AUDIO DAC) CIRCUIT on SCHEMATIC DIAGRAM-6/12-C (AC7 AMUT, AC5 CLKSEL)
To B DVD MODULE (FEP) CIRCUIT on SCHEMATIC DIAGRAM-2/1-D (FC1 HFMON)
To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/1-D (CD5 SYSCLK) — LB6202 VLP0155-T
To B DVD MODULE (AUDIO DAC) CIRCUIT on SCHEMATIC DIAGRAM-6/12-C (AC8 CLK33M) — K6201 0Ω
To B DVD MODULE (VIDEO DAC) CIRCUIT on SCHEMATIC DIAGRAM-5/12-F (CV4 CMD, CV5 STATUS, CV6 DSPCLK)
To B DVD MODULE (FEP) CIRCUIT on SCHEMATIC DIAGRAM-2/12-B (FC3 DCFLT)
To B DVD MODULE (VIDEO DAC) CIRCUIT on SCHEMATIC DIAGRAM-5/1-G (DB3 D+5V, DG1 D.GND) — 5V

IC6211 PST596JNR RESET — 1 M/R, 2 SUB, 3 GND, 4 VOUT, 5 Vcc — 3.3V — R6211 4.7K
Q6215 UN5212TX RESET — 0V / 3.3V — D6215 MA728TX — C6215 0.1
R6215 10K
C6211 100P
R6216 1K
RA6206 47K
R6202 10K
RA6201 10K
R6201 47K
C6206 0.1
RA6205 10K
RA6204 10K
R6207 4.7K
R6208 4.7K
RA6202 10K
R6206 10K
C6205 0.1
C6221 0.1
C6202 0.1
C6203 0.1
C6204 0.1
C6223 0.1
C6222 0.1
R6210 100
K6303 0Ω
K6201 0Ω
LB6221 VLP0146-T
LB6202 VLP0155-T

IC6201 MN102H60GFD CPU
1.5V P-P, 0.2 µs. 0.5V/DIV.

IC6223 C0JBAA000001 AND GATE — GND, 3V, Vcc
IC6222 C0JBAA000001 AND GATE — GND, 2.7V, Vcc
IC6221 C3EBGC000033 EE PROM — A0, A1, A2, GND, Vcc, WP, SCL, SDA

IC6301 C3FBND000098 32M FLASH MEMORY
A15, A14, A13, A12, A11, A10, A9, A8, A19, A20, XWE, XRESET, N.C., WP/Acc, RDY/XBSY, A18, A17, A7, A6, A5, A4, A3, A2, A1
A16, XBYTE, Vss, DQ15/A-1, DQ7, DQ14, DQ6, DQ13, DQ5, DQ12, DQ4, Vdd, DQ11, DQ3, DQ10, DQ2, DQ9, DQ1, DQ8, DQ0, XOE, Vss, XCE, A0
C6302 0.1
C6301 0.1

LB6201 VLP0146-T
C6201 6.3V33
PS6201 — 10 D+3.3V, 9 RESERVED, 8 KMODE, 7 SCSIEN, 6 258SY, 5 1968SY, 4 SBI1, 3 SBO1, 2 SBT1, 1 D.GND — TEST TERMINAL
RA6203 4.7K

To B DVD MODULE (VIDEO DAC) CIRCUIT on SCHEMATIC DIAGRAM-5/1-C (DB1 D+3.3V, DG1 D.GND)
To B DVD MODULE (AUDIO DAC) CIRCUIT on SCHEMATIC DIAGRAM-6/1-H (AC1 SBI1, AC2 SBO1, AC3 SBT1, AC4 STBDAC2)
SCHEMATIC DIAGRAM-6/12-C (AC6 AC3H)
To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/1-C,D (CPUADR0–CPUADR17 / SC9–SC26)
To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/1-E,F (CPUADR0–CPUADR17 / SC9–SC26)
To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/1-D,E (CPUDT0–CPUDT7 / SC1–SC8)
To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/1-B,C (CPUDT0–CPUDT15 / SC1–SC8, CD6–CD13)

SL-DV290(EE,GN) DVD MODULE(CPU) CIRCUIT DIAGRAM

SCHEMATIC DIAGRAM–8

: POSITIVE VOLTAGE LINE
: AUDIO SIGNAL LINE
:SURROUND SP. SIGNAL LINE
:CENTER SP. SIGNAL LINE
:SUB WOOFER SIGNAL LINE

E LOADING MOTOR CIRCUIT

IC1
TA7291P
MOTOR DRIVE

RM1 (LOADING MOTOR)
C2 0.01
R1 1K
C1 16V100
D2 MTZJ4R7BTA
Q1 RVTDTC143EST
MOTOR DRIVE

F CLAMP SW CIRCUIT

S4 (CLAMP)

G BOTTOM SW CIRCUIT

S5 (BOTTOM)
D1 GP1S94 (POSITION SENSOR)

D OPERATION CIRCUIT

D608 SML79455C
D601 SELS5923C (CINEMA)
D602 SELS5923C (DOUBLE RE-MASTER)
D603 (DISC5)
D604 (DISC4)
D605 (DISC3)
D606 (DISC2)
D607 (DISC1)
D603-607 LNJ301MPUJAD

S612 (A-B REPEAT)
S613 (REPEAT)
S614 (CD EDIT)
S615 (CINEMA)
S616 (DOUBLE RE-MASTER)
S617
S618
S619
S620
S621

S601 (DISC5)
S602 (DISC4)
S603 (DISC3)
S604 (DISC2)
S605 (DISC1)
S606 (DISC1)
S607 (DISC2)
S608 (DISC3)
S609 (DISC4)
S610 (DISC5)
S611 (OPEN/CLOSE)
(DIRECT OPEN)

IC601
NJU3713GTE1
LED DRIVE

C MAIN CIRCUIT

Q304 2SB621ARSTA PLUNGER DRIVE
Q305 UN521NTX PLUNGER DRIVE
D302-304 RL1N4003N02

PLUNGER
S2 (TRAY POSITION 2 DET.)
S1 (TRAY POSITION 1 DET.)
S3 (OP/ CL DET.)

CN1 CN3 CN301 CN2

To B MODULE CIRCUIT (FP4202) on SCHEMATIC DIAGRAM–6/12-D,E
To B MODULE CIRCUIT (FP3202) on SCHEMATIC DIAGRAM–5/12-F,G

Q307 DTC114EUA106 MUTING CONT.
Q308 DTC114EUA106 MUTING CONT.
Q401 UN5214TX RESET
Q402 0.9V 0.6V
Q402-404 2SD1819ATX INTERFACE
Q403 0.7V 0V
Q404 0.8V 1.5V

IC401
C2BBFD000402
SYSTEM CONTROL

X401 (8MHz)

SJ313 0 Ω

SL-DV290(EE,GN) LOADING MOTOR,CLAMP SW,BOTTOM SW,OPERATION,MAIN CIRCUIT DIAGRAM

To B MODULE CIRCUIT(FP3203) on SCHEMATIC DIAGRAM–5/12-C

: POSITIVE VOLTAGE LINE : AUDIO SIGNAL LINE : VIDEO SIGNAL LINE :SURROUND SP. SIGNAL LINE :CENTER SP. SIGNAL LINE :SUB WOOFER SIGNAL LINE

CN501 TRAY/ TRV, TRV-SW+, TRAYMUT, TRAYDRV, TRAYREF, V.GND, G, V.GND, CD/ B, V.GND, C-OUT/ CR/ R, V.GND, C-IN, V.GND, Y-IN

IC891 BU4053BCFE2 SIGNAL SELECTOR

Q891 DTC114EUA106 SWITCHING

IC501 C9ZB00000431 VIDEO BUFFER

Q501 DTC114EUA106 SWITCHING(WIDE)

IC802 NJM4580EDTE1 BUFFER AMP(C/SW)

IC803 NJM4580EDTE1 BUFFER AMP(SL/SR)

IC804 NJM4580EDTE1 BUFFER AMP(FL/FR)

Q801,802 2SD1328TX MUTING

Q803,804 2SD1328TX MUTING

Q805,806 2SD1328TX MUTING

Q303 DTC114EUA106 SIGNAL SELECTOR CONT.

IC801 C0JBAS000138 SIGNAL SELECTOR

IC805 BA4558FHTT1 VREF

Q807 UN5111TX MUTING CONT.

IC4 NJM78M05FA REGULATOR

IC3 LM2940T5M REGULATOR

Q9 2SB1417PQTA POWER SUPPLY

Q8 FMW1T98 POWER SUPPLY CONT.

SCHEMATIC DIAGRAM-10

C MAIN CIRCUIT

: POSITIVE VOLTAGE LINE
: AUDIO SIGNAL LINE
: VIDEO SIGNAL LINE
:CENTER SP. SIGNAL LINE
:SUB WOOFER SIGNAL LINE
:SURROUND SP. SIGNAL LINE

R503 75 Z501 VLP0146-T L501 JK501 VIDEO OUT
R501 1 R502 1 C501 0.01
R506 75 Z502 VLP0146-T L502
R507 75 Z503 VLP0146-T JK501 S-VIDEO OUT
R504 1 R505 1 C502 0.01

JK1
To SOUND PROCESSOR(SH-DV290) & CASSETTE DECK(RS-DV290)
20 SYNC
19 CD REQ
18 CT.GND
17 CS
16 +B (10V)
15 D.GND
14 SCLK
13 DATA
12 NC
11 V.GND
10 S.WOOFER
9 CENTER
8 NC
7 NC
6 NC
5 CD Rch OUT
4 CD A.GND
3 CD Lch OUT
2 SUR R
1 SUR L

C816 16V10 C815 16V10 R823 10K R824 100K

Q16 2SD874QRSTX REGULATOR
R38 10 C24 1000P R37 100 R39 1K C23 10V47 D14 MA8082MTX

Q12 2SB1417PQTA POWER SUPPLY
C19 1000P R29 22K

DC+10V

Q11 FMW1T98 P. SUPPLY CONT.
R30 100 R31 680

Q13 2SB1218TX POWER SUPPLY CONT.
R32 47K R33 4.7K

D10 MA111TX R35 1K R27 1.2K C20 10V47 R28 47K D11 MA8091MTX

Q15 2SB766ATX POWER SUPPLY

J F Q G

Q14 FMW1T98 P. SUPPLY CONT.
C21 1000P R44 1.2K R34 470 D12 MA111TX C22 16V10 R36 22K D13 MA111TX R42 100

D4 MA111TX Q3 DTC114EUA106 SWITCHING

R3 2.2K R4 10K R2 8.2K

IC2 PQ1CZ31H2ZP DC-DC CONVERTER
4 ADJ 5 ON/ OFF 3 GND 2 VOUT 1 VIN

Q7 2SB1417PQTA POWER SUPPLY
C10 1000P Q6 FMW1T98 P. SUPPLY CONT.
R17 22K D7 MA728TX D6 MA111TX R16 470 C11 10V10

L4 L2 L1
C7 6.3V820 D8 SFPB-72V C4 16V470 C3 16V3300

D.GND A.GND
C30 1000P C29 0.01 C26 16V10 R41 100 D17 MA111TX D18 MA111TX
CT.GND R40 0 Ω E1

SL-DV290(EE,GN) MAIN CIRCUIT DIAGRAM

H G F E D C B A

25 26 27 28 29 30 31 32 33 34 35 36

SCHEMATIC DIAGRAM-1

NOTE:
The number which noted at the connectors on the schematic diagram as
"SCHEMATIC DIAGRAM-1" or "SCHEMATIC DIAGRAM-2"
indicates the schematic diagram serial number located on the left corner in the schematic d

A INTERFACE CIRCUIT

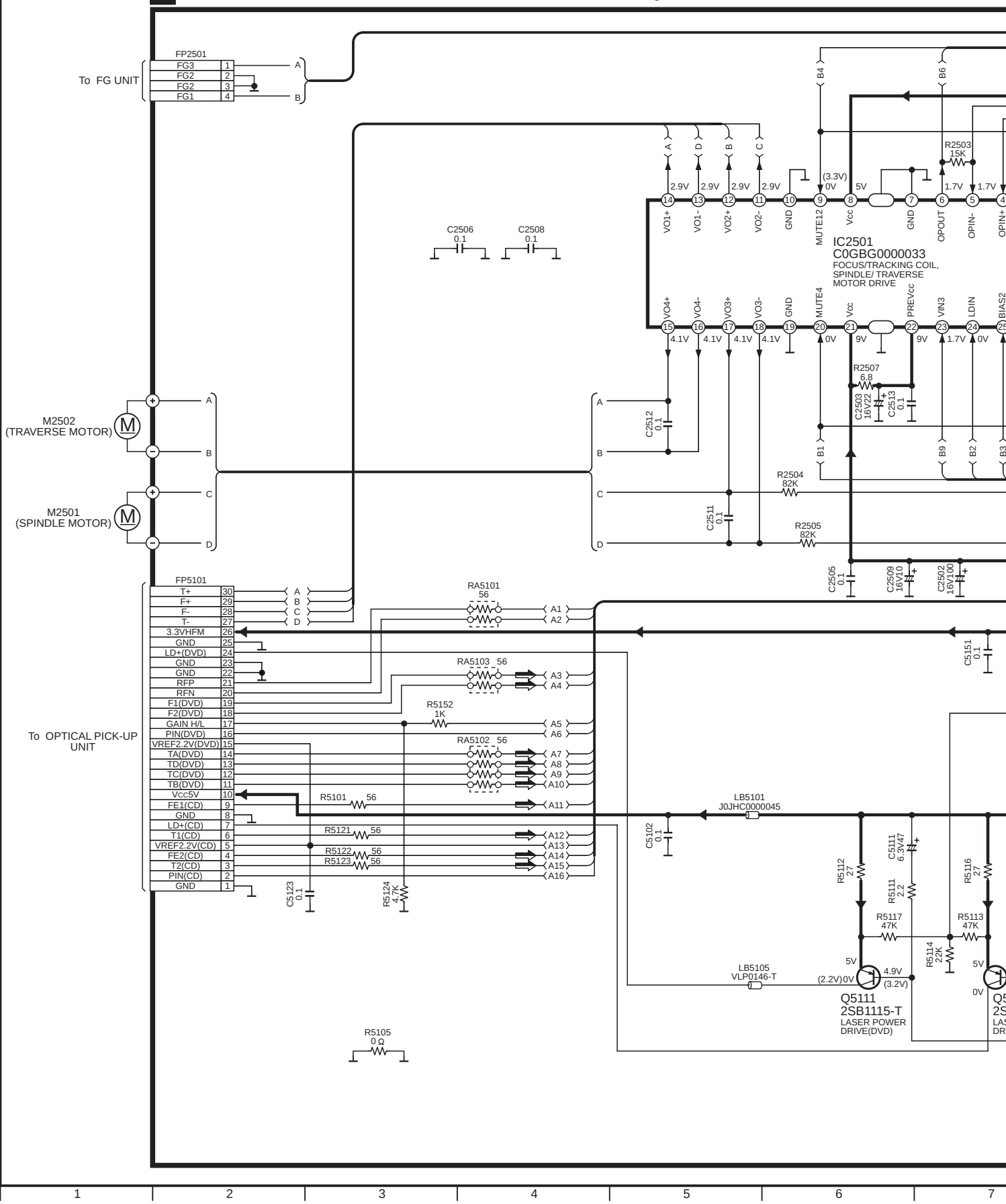
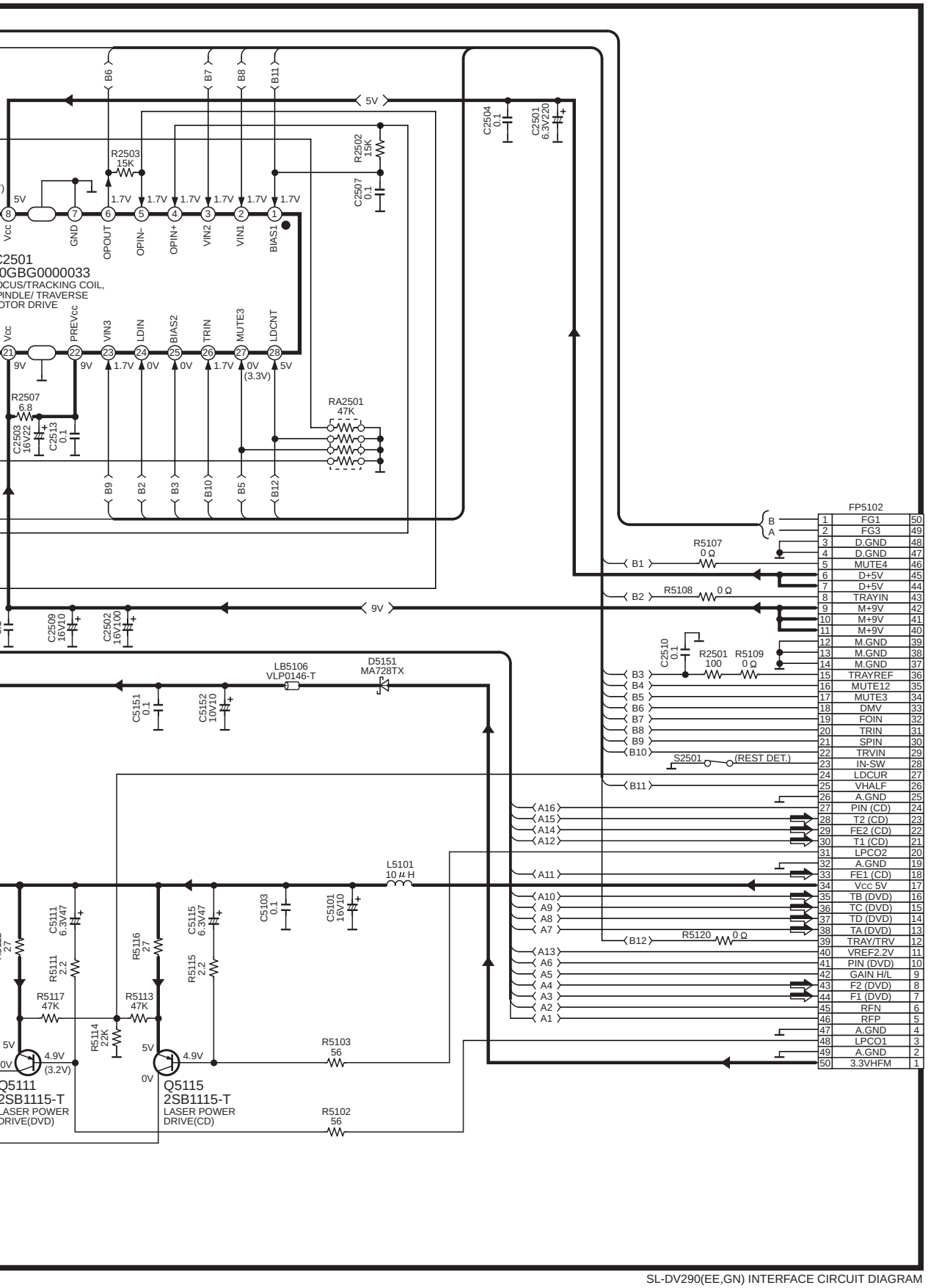


diagram as

left corner in the schematic diagram.

:POSITIVE VOLTAGE LINE :AUDIO/VIDEO SIGNAL LINE



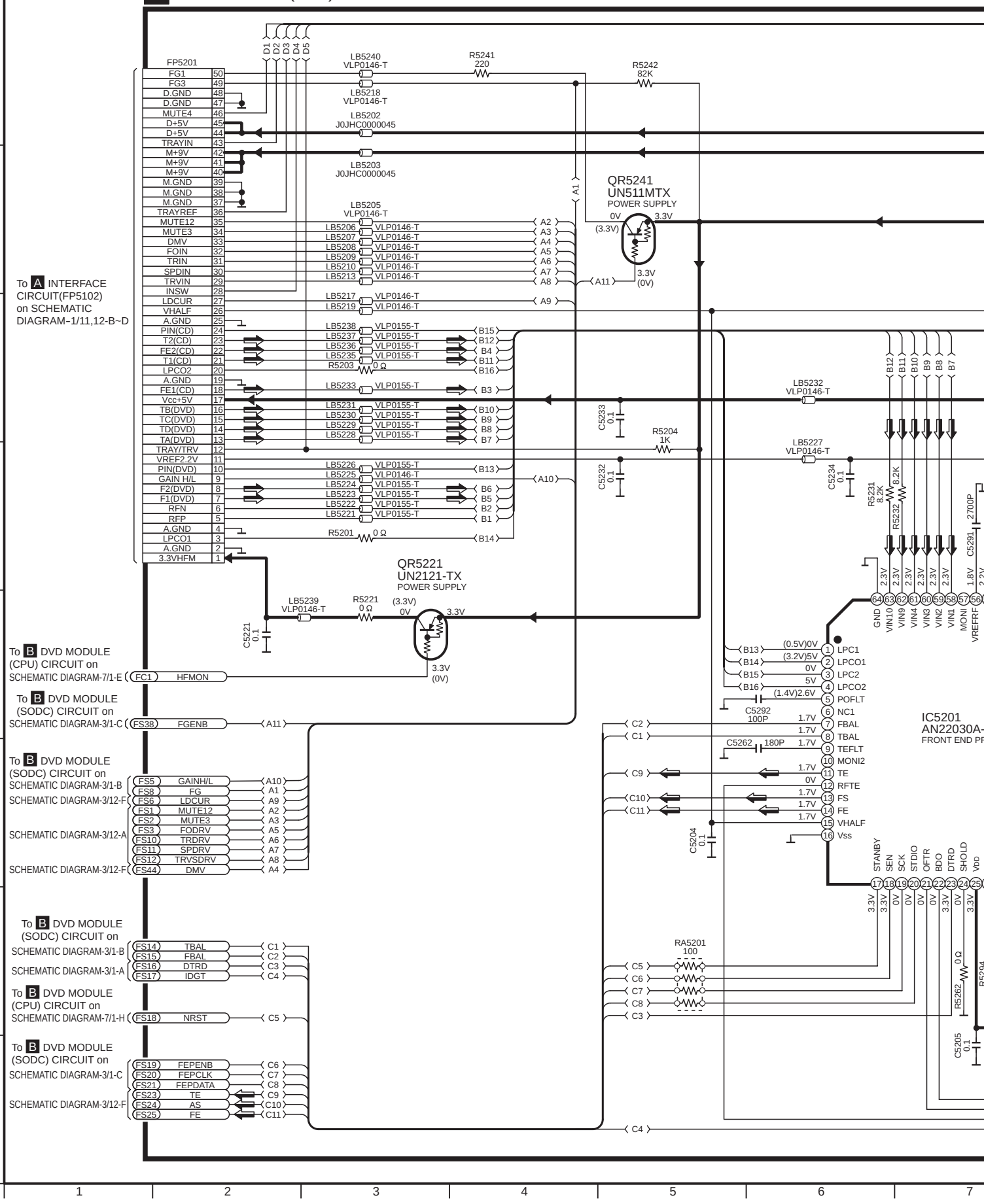
To B DVD MODULE (FEP) CIRCUIT(FP5201) on SCHEMATIC DIAGRAM-2/1,2-E~H

SL-DV290(EE,GN) INTERFACE CIRCUIT DIAGRAM

SCHEMATIC DIAGRAM-2

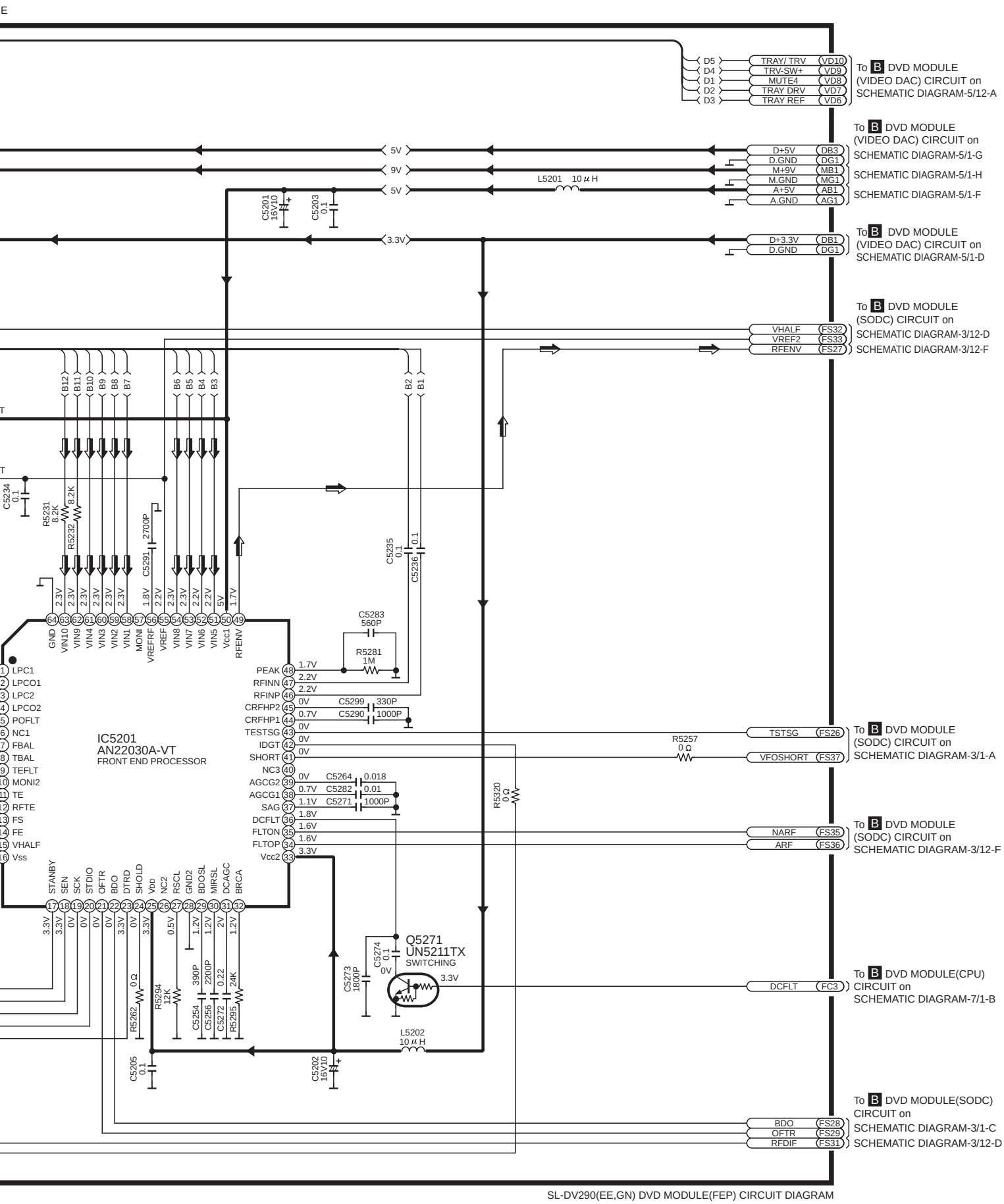
B DVD MODULE(FEP) CIRCUIT

:POSITIVE VOLTAGE LINE :AUDIO/VIDEO SIGNAL LINE



1 2 3 4 5 6 7

A B C D E F G H

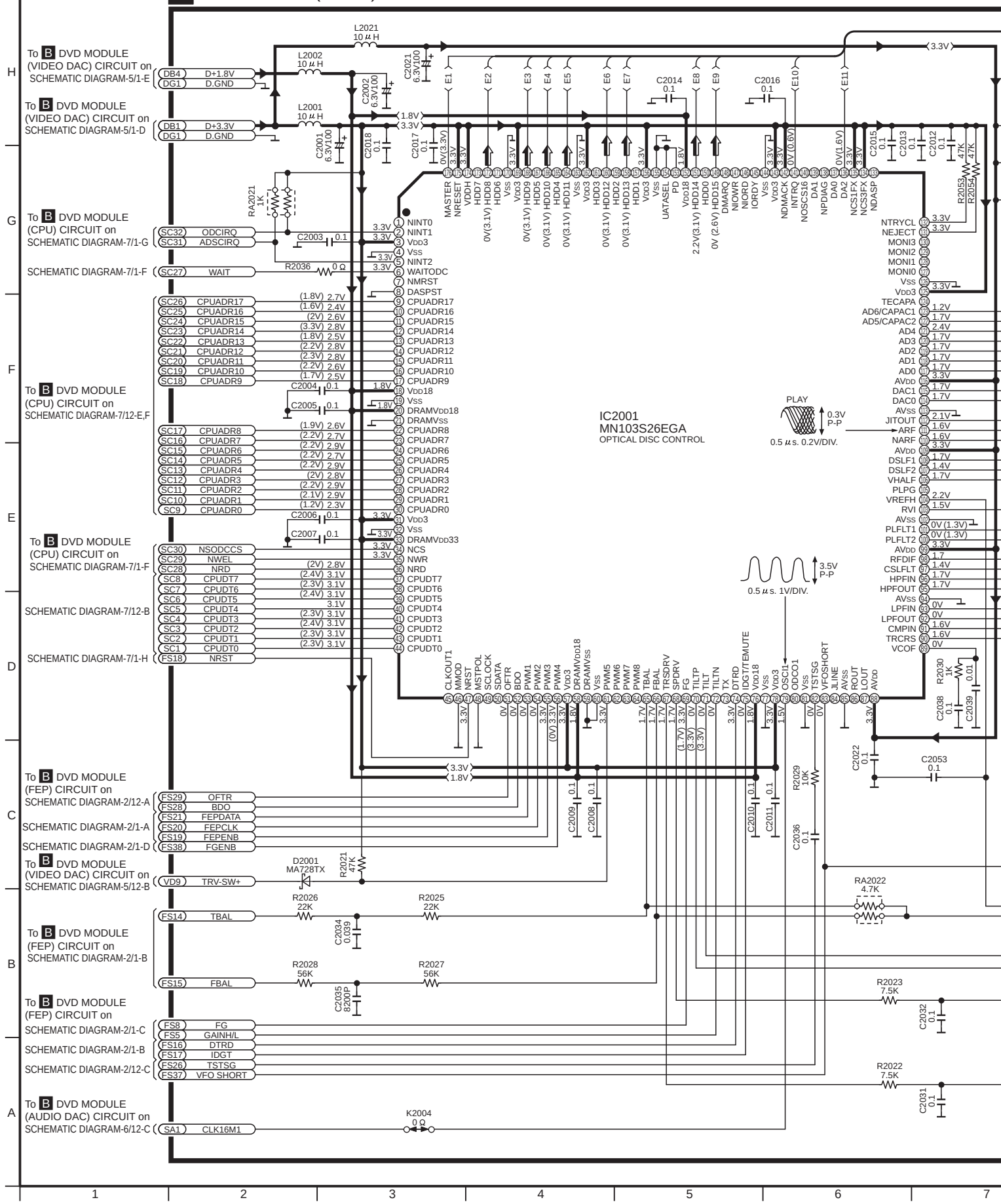


SL-DV290(EE,GN) DVD MODULE(FEP) CIRCUIT DIAGRAM

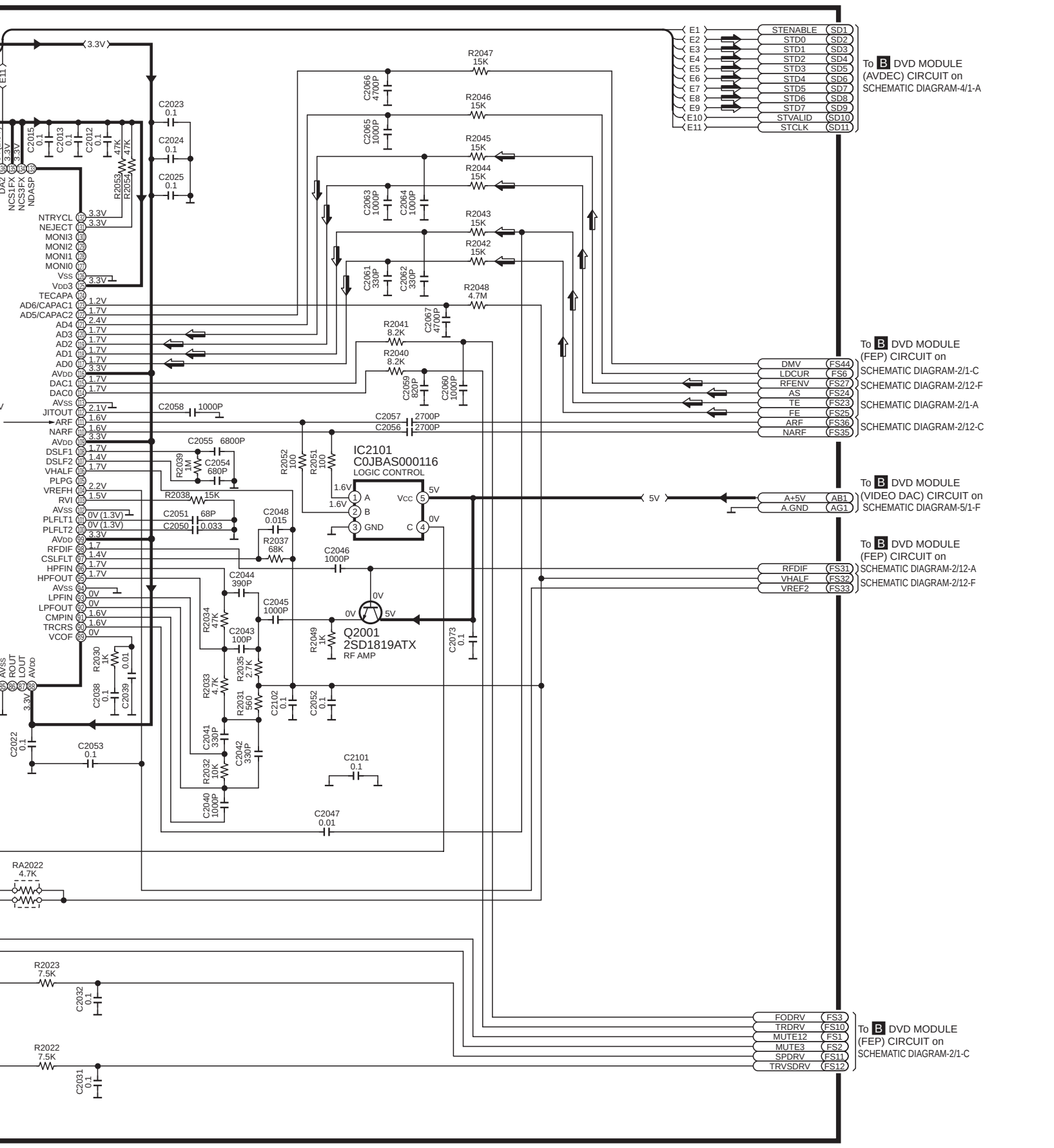
SCHEMATIC DIAGRAM-3

B DVD MODULE(SODC) CIRCUIT

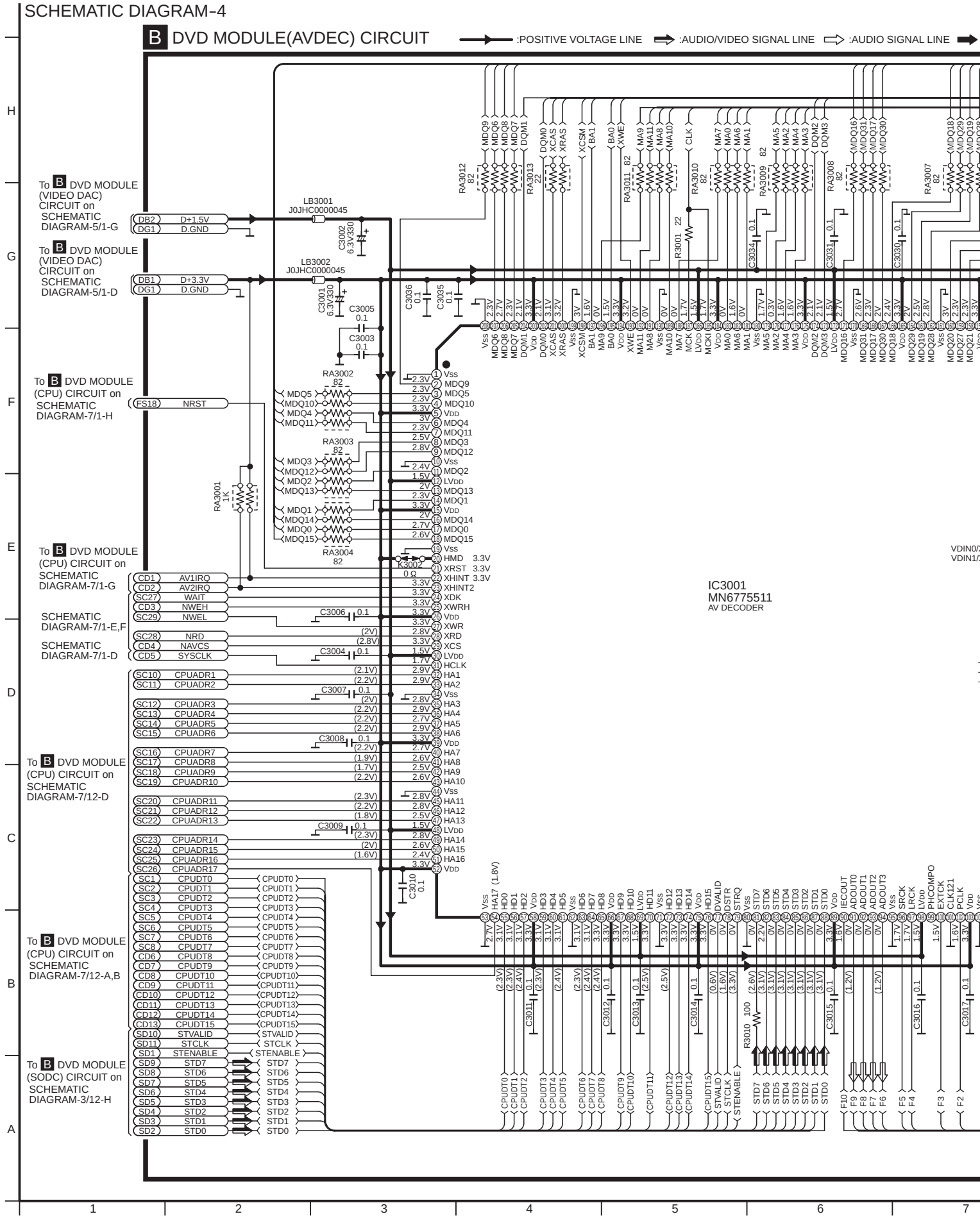
:POSITIVE VOLTAGE LINE :AUDIO/VIDEO SIGNAL LINE



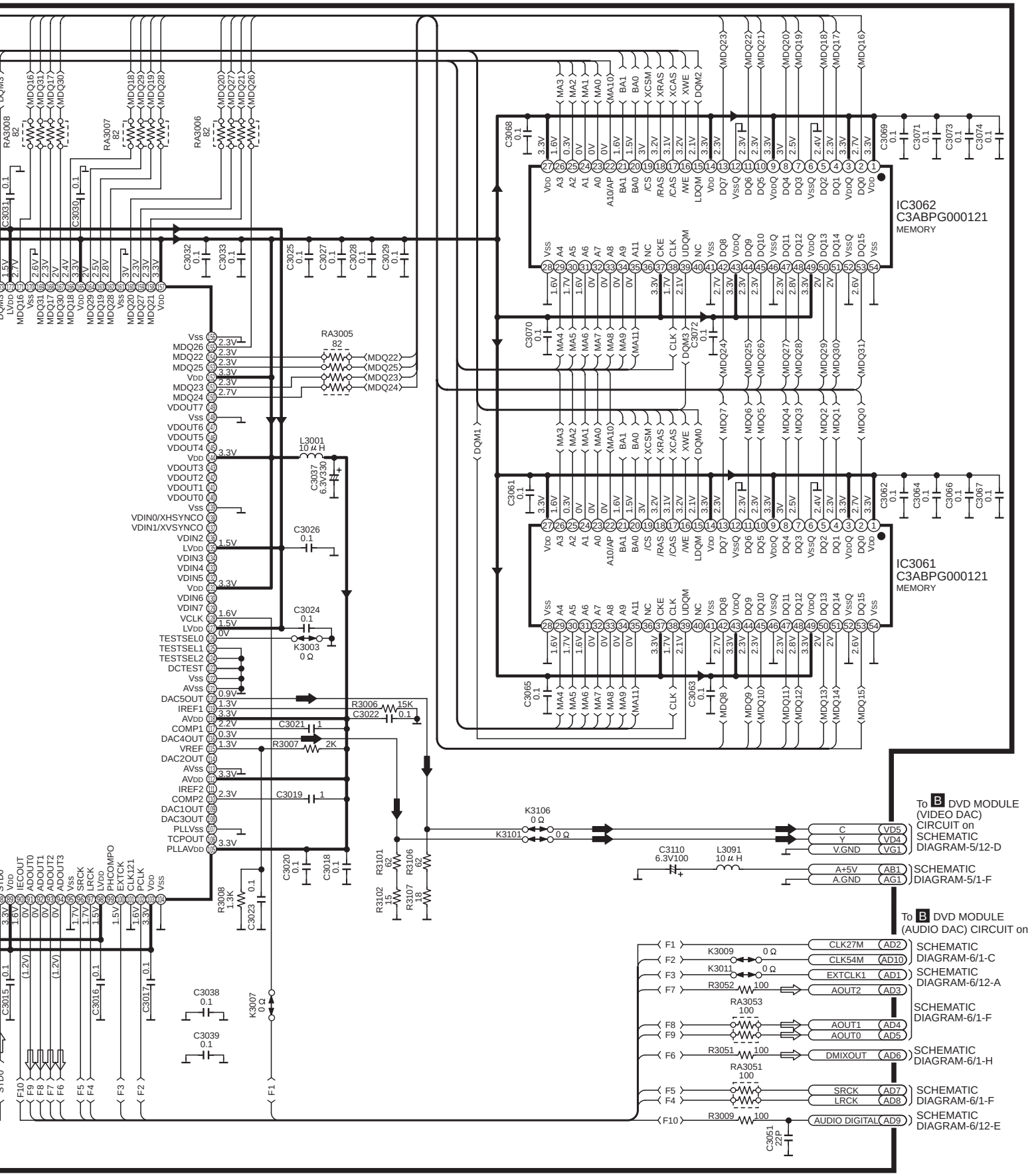
L LINE


IC2101
C0JBAS000116
LOGIC CONTROL
Q2001
2SD1819ATX
RF AMP
RA2022
4.7K
To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/1-A
To B DVD MODULE (FEP) CIRCUIT on SCHEMATIC DIAGRAM-2/1-C SCHEMATIC DIAGRAM-2/12-F SCHEMATIC DIAGRAM-2/1-A SCHEMATIC DIAGRAM-2/12-C
To B DVD MODULE (VIDEO DAC) CIRCUIT on SCHEMATIC DIAGRAM-5/1-F
To B DVD MODULE (FEP) CIRCUIT on SCHEMATIC DIAGRAM-2/12-A SCHEMATIC DIAGRAM-2/12-F
To B DVD MODULE (FEP) CIRCUIT on SCHEMATIC DIAGRAM-2/1-C

SL-DV290(EE,GN) DVD MODULE(SODC) CIRCUIT DIAGRAM


SCHEMATIC DIAGRAM-4
B DVD MODULE(AVDEC) CIRCUIT
:POSITIVE VOLTAGE LINE
:AUDIO/VIDEO SIGNAL LINE
:AUDIO SIGNAL LINE
IC3001
MN6775511
AV DECODER
To B DVD MODULE (VIDEO DAC) CIRCUIT on SCHEMATIC DIAGRAM-5/1-G
To B DVD MODULE (VIDEO DAC) CIRCUIT on SCHEMATIC DIAGRAM-5/1-D
To B DVD MODULE (CPU) CIRCUIT on SCHEMATIC DIAGRAM-7/1-H
To B DVD MODULE (CPU) CIRCUIT on SCHEMATIC DIAGRAM-7/1-G
SCHEMATIC DIAGRAM-7/1-E,F
SCHEMATIC DIAGRAM-7/1-D
To B DVD MODULE (CPU) CIRCUIT on SCHEMATIC DIAGRAM-7/12-D
To B DVD MODULE (CPU) CIRCUIT on SCHEMATIC DIAGRAM-7/12-A,B
To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/12-H
LB3001 J0JHC0000045
LB3002 J0JHC0000045
D+1.5V
D+3.3V
D.GND
NRST
AV1IRQ
AV2IRQ
WAIT
NWEH
NWEL
NRD
NAVCS
SYSCLK
CPUADR1
CPUADR2
CPUADR3
CPUADR4
CPUADR5
CPUADR6
CPUADR7
CPUADR8
CPUADR9
CPUADR10
CPUADR11
CPUADR12
CPUADR13
CPUADR14
CPUADR15
CPUADR16
CPUADR17
CPUDT0
CPUDT1
CPUDT2
CPUDT3
CPUDT4
CPUDT5
CPUDT6
CPUDT7
CPUDT8
CPUDT9
CPUDT10
CPUDT11
CPUDT12
CPUDT13
CPUDT14
CPUDT15
STVALID
STCLK
STENABLE
STD7
STD6
STD5
STD4
STD3
STD2
STD1
STD0
HMD 3.3V
XRST 3.3V
XHINT 3.3V
XHINT2
XDK
XWRH
XWR
XRD
XCS
HCLK
HA1
HA2
HA3
HA4
HA5
HA6
HA7
HA8
HA9
HA10
HA11
HA12
HA13
HA14
HA15
HA16
HA17 (1.8V)
HD0
HD1
HD2
HD3
HD4
HD5
HD6
HD7
HD8
HD9
HD10
HD11
HD12
HD13
HD14
HD15
DVALID
DSTR
STRQ
IECOUT
ADOUT0
ADOUT1
ADOUT2
ADOUT3
SRCK
LRCK
PHCOMPO
EXTCK
CLK121
PCLK
MDQ0
MDQ1
MDQ2
MDQ3
MDQ4
MDQ5
MDQ6
MDQ7
MDQ8
MDQ9
MDQ10
MDQ11
MDQ12
MDQ13
MDQ14
MDQ15
MDQ16
MDQ17
MDQ18
MDQ19
MDQ20
MDQ21
MDQ27
MDQ28
MDQ29
MDQ30
MDQ31
DQM0
DQM1
DQM2
DQM3
XCAS
XRAS
XCSM
XWE
CLK
MCK
MCKI
MA0
MA1
MA2
MA3
MA4
MA5
MA6
MA7
MA8
MA9
MA10
MA11
BA0
BA1
LVDD
VDD
VSS
RA3001 1K
RA3002 82
RA3003 82
RA3004 82
RA3007 82
RA3008 82
RA3009 82
RA3010 82
RA3011 82
RA3012 82
RA3013 22
R3001 22
R3010 82
R3010 100
K3002 0 Ω
C3001 6.3V330
C3002 6.3V330
C3003 0.1
C3004 0.1
C3005 0.1
C3006 0.1
C3007 0.1
C3008 0.1
C3009 0.1
C3010 0.1
C3011 0.1
C3012 0.1
C3013 0.1
C3014 0.1
C3015 0.1
C3016 0.1
C3017 0.1
C3030 0.1
C3031 0.1
C3034 0.1
C3035 0.1
C3036 0.1
VDIN0/
VDIN1/
1
2
3
4
5
6
7
A
B
C
D
E
F
G
H

:AUDIO SIGNAL LINE :VIDEO SIGNAL LINE

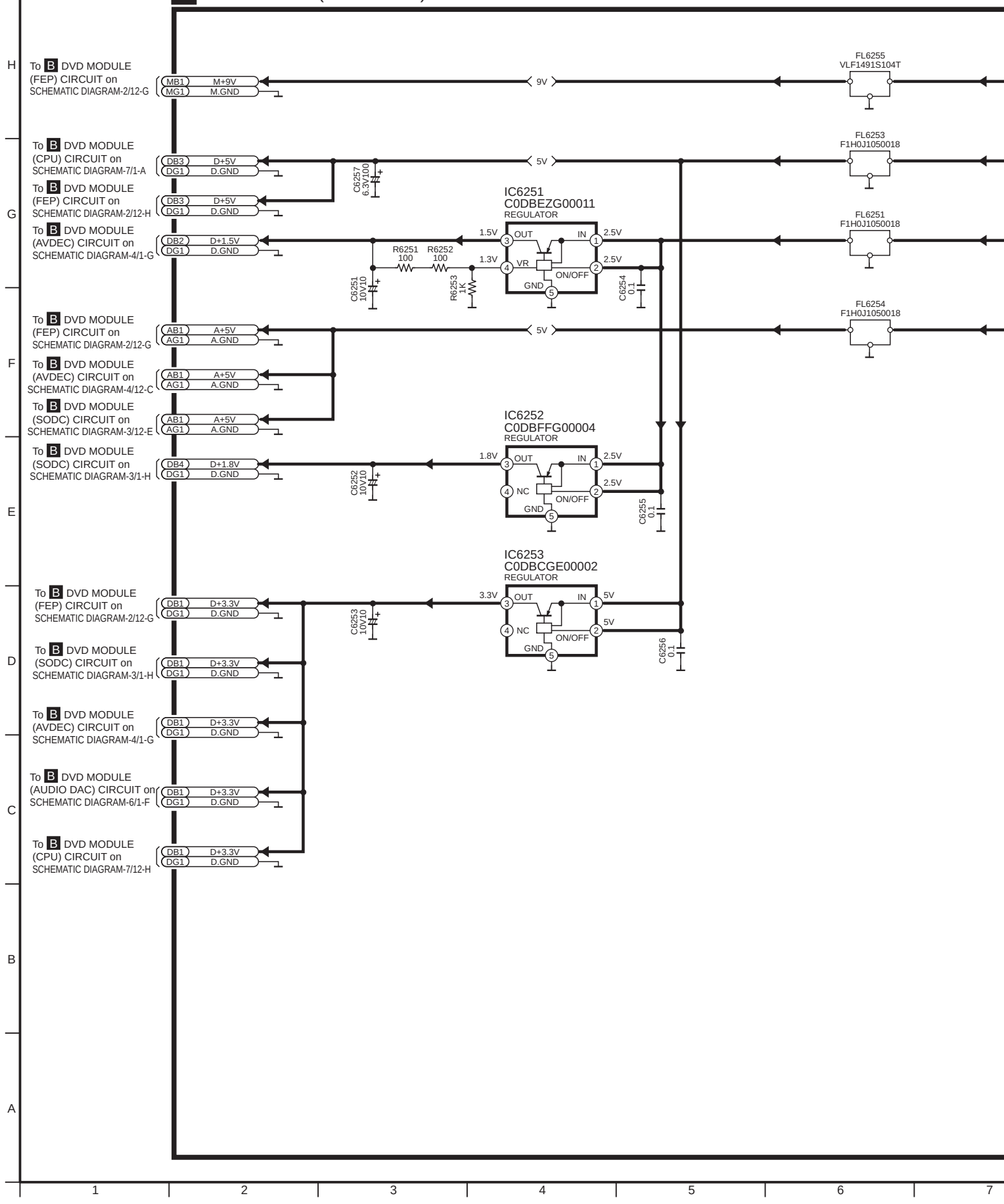


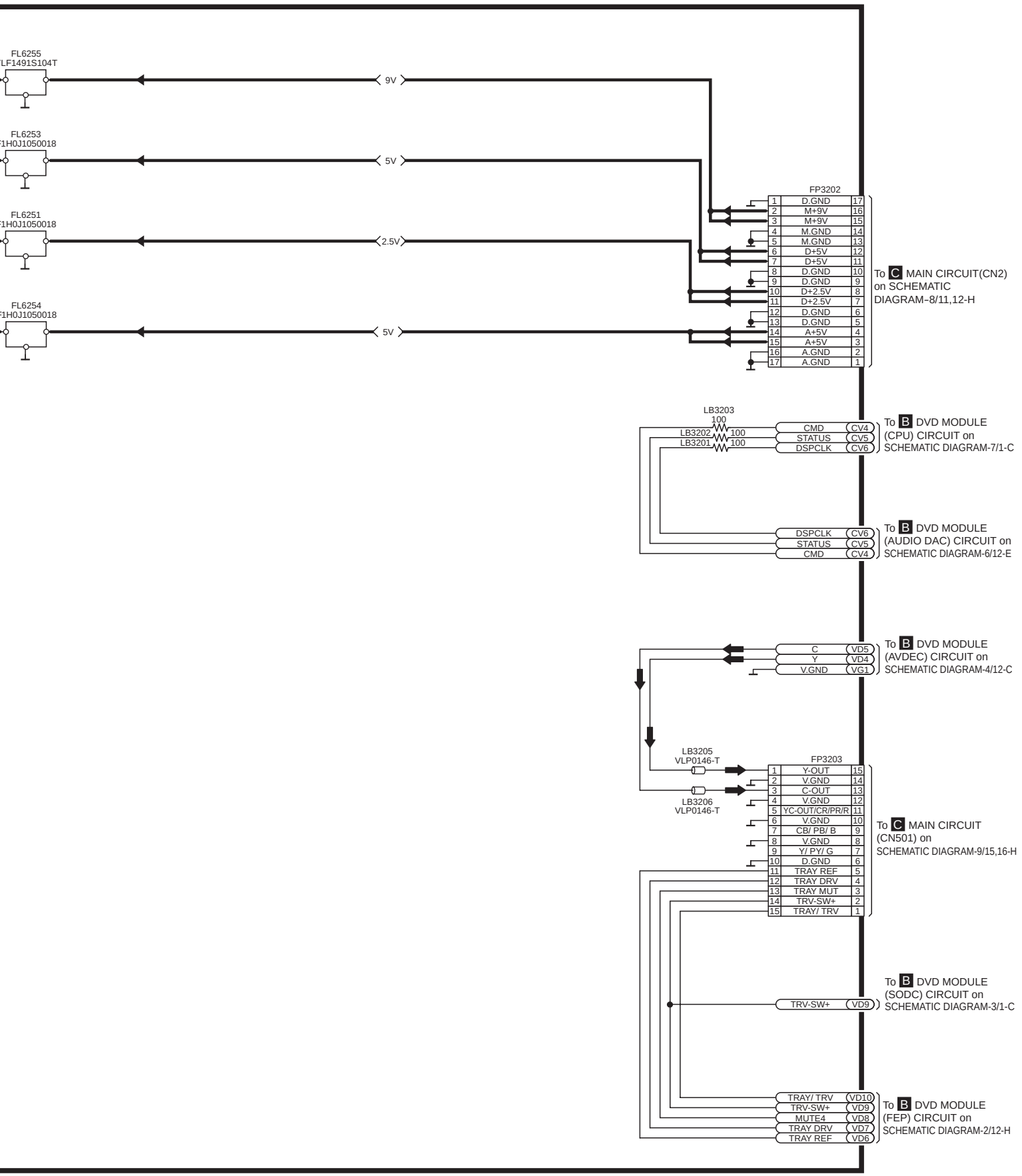
SL-DV290(EE,GN) DVD MODULE(AVDEC) CIRCUIT DIAGRAM

SCHEMATIC DIAGRAM-5

B DVD MODULE(VIDEO DAC) CIRCUIT

:POSITIVE VOLTAGE LINE :VIDEO SIGNAL LINE



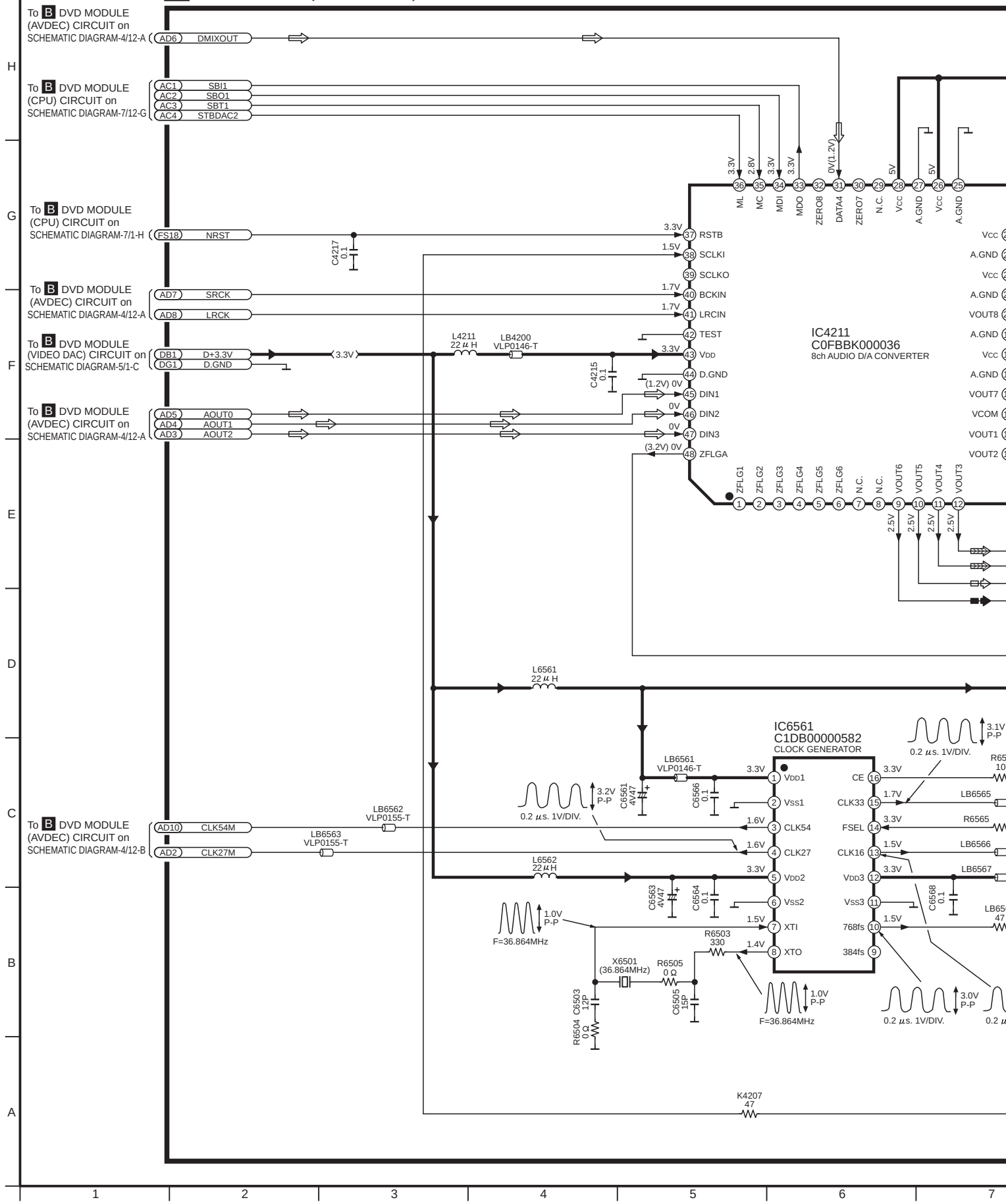


SL-DV290(EE,GN) DVD MODULE(VIDEO DAC) CIRCUIT DIAGRAM

SCHEMATIC DIAGRAM-6

B DVD MODULE(AUDIO DAC) CIRCUIT

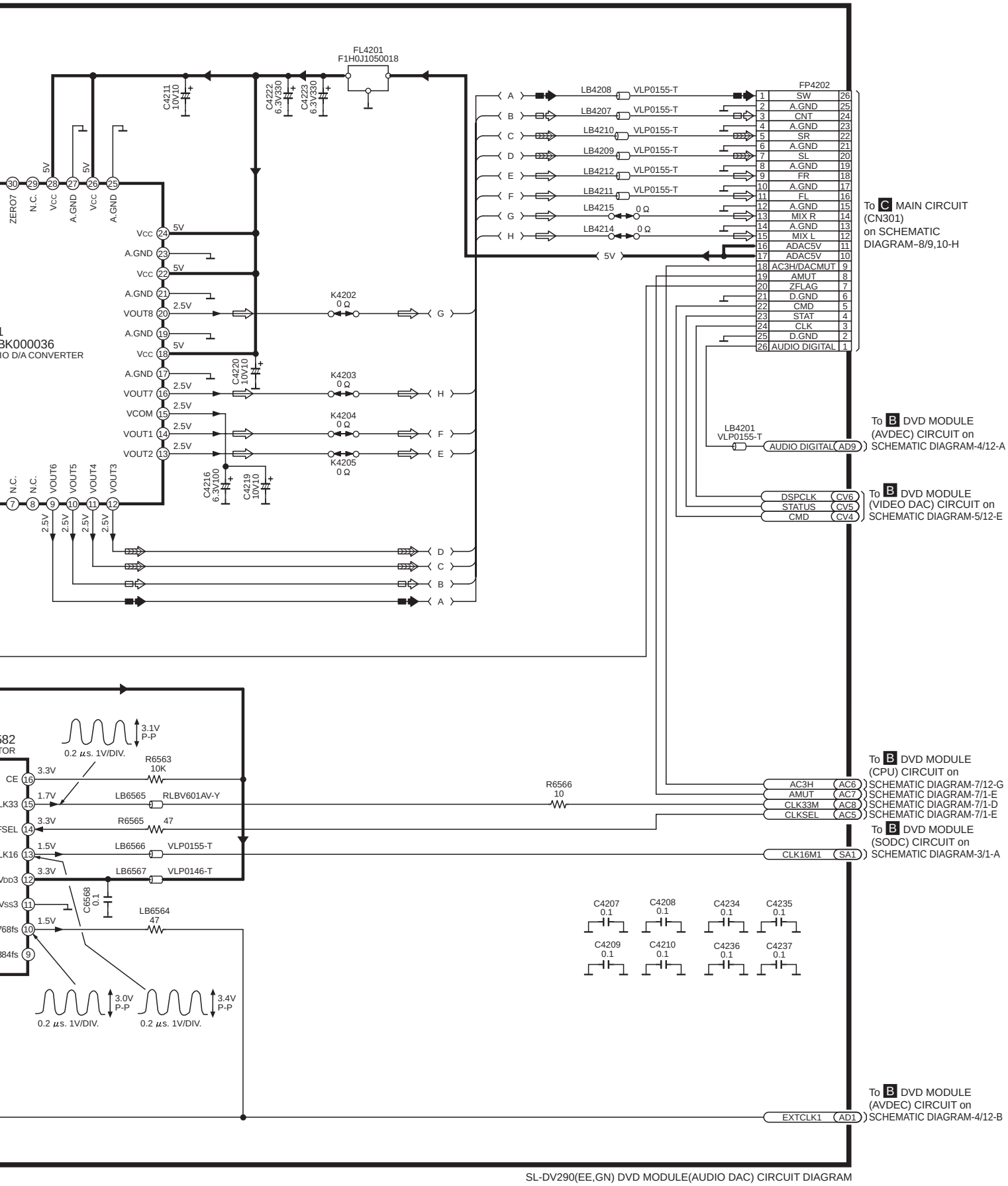
:POSITIVE VOLTAGE LINE :AUDIO SIGNAL LINE :SURROUND SP. SIGNAL



H G F E D C B A

1 2 3 4 5 6 7

:SURROUND SP. SIGNAL LINE :CENTER SP. SIGNAL LINE :SUB WOOFER SIGNAL LINE

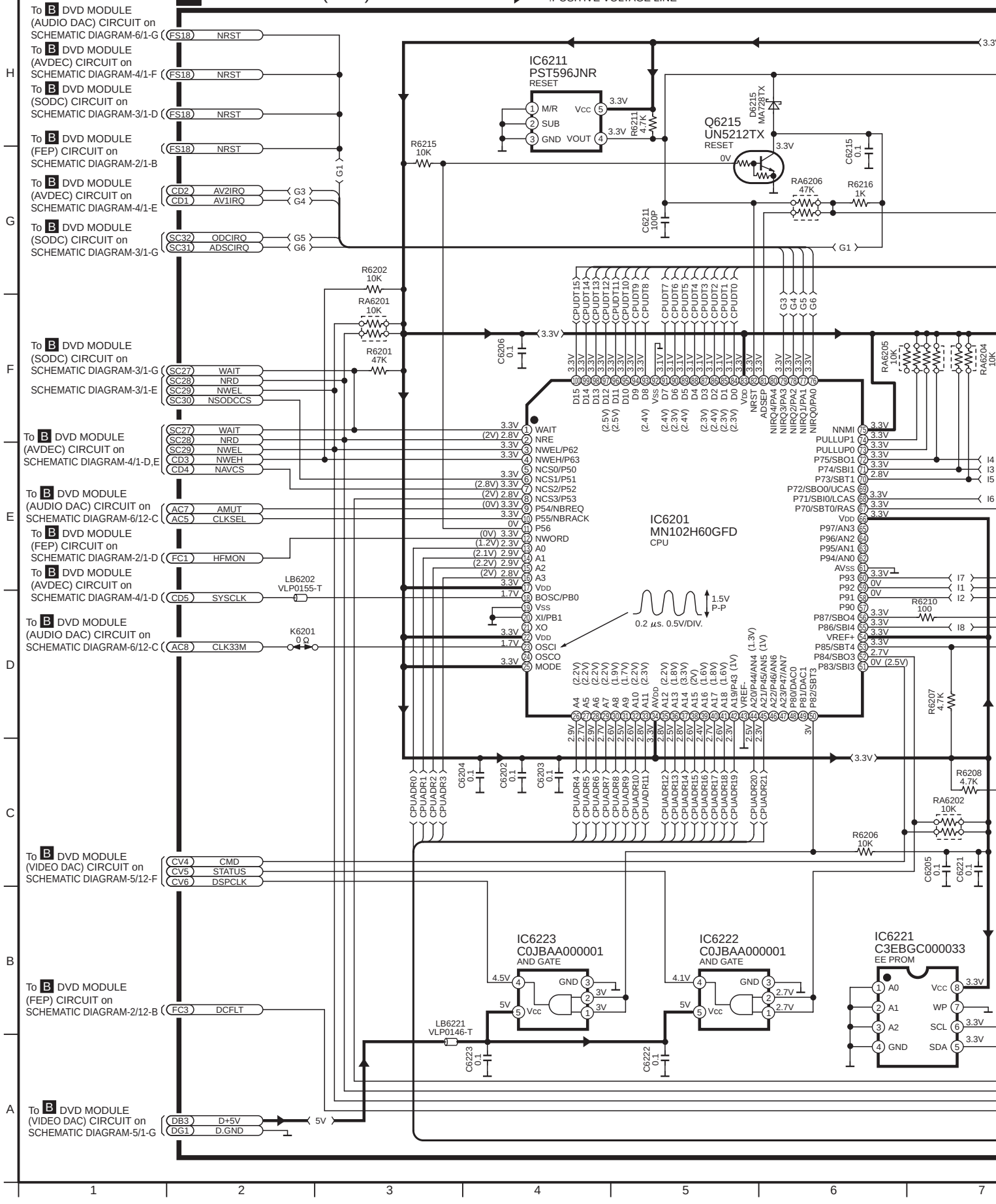


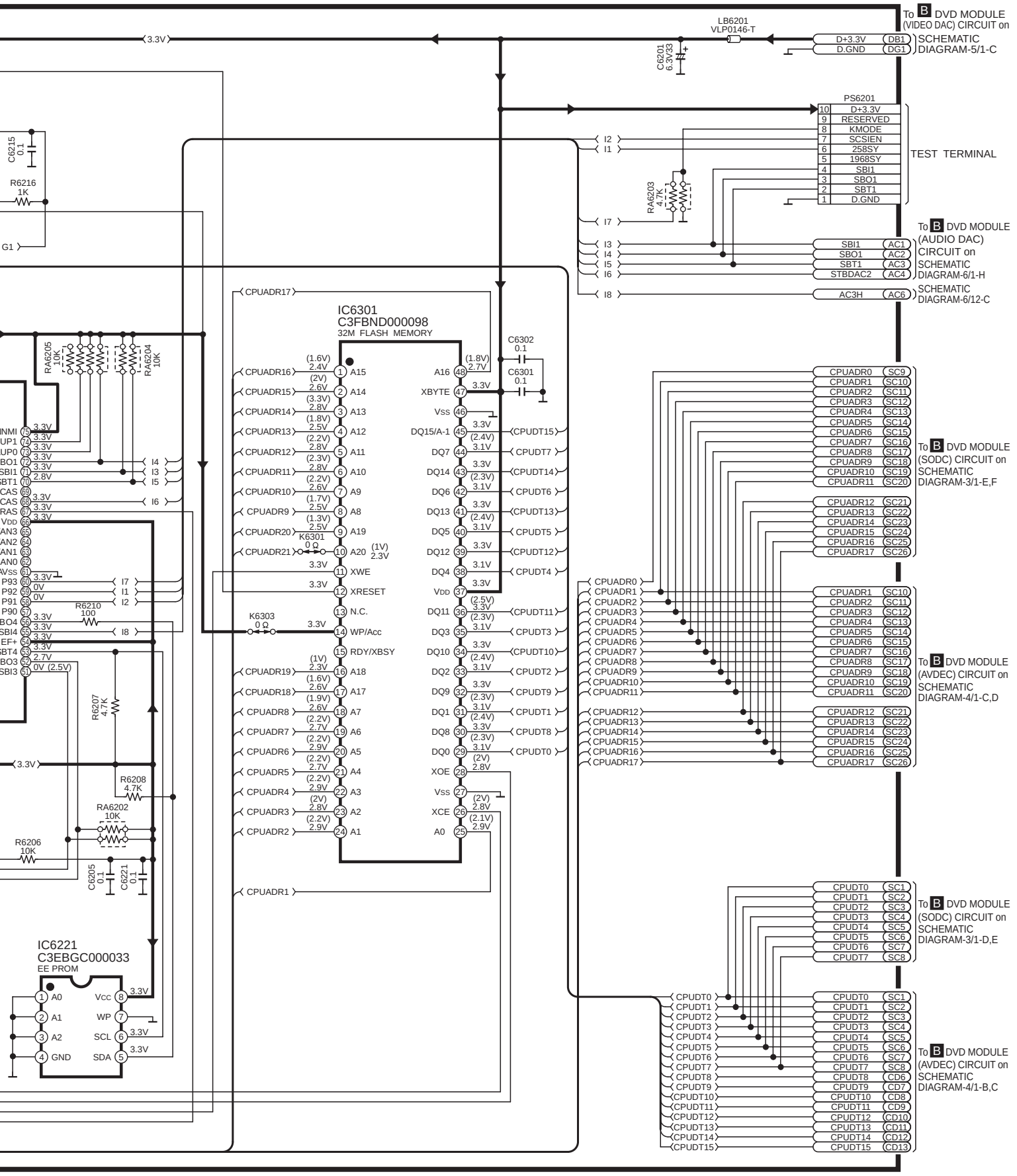
SL-DV290(EE,GN) DVD MODULE(AUDIO DAC) CIRCUIT DIAGRAM

SCHEMATIC DIAGRAM-7

B DVD MODULE(CPU) CIRCUIT

:POSITIVE VOLTAGE LINE


To B DVD MODULE (AUDIO DAC) CIRCUIT on SCHEMATIC DIAGRAM-6/1-G
To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/1-F
To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/1-D
To B DVD MODULE (FEP) CIRCUIT on SCHEMATIC DIAGRAM-2/1-B
To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/1-E
To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/1-G
To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/1-G
SCHEMATIC DIAGRAM-3/1-E
To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/1-D,E
To B DVD MODULE (AUDIO DAC) CIRCUIT on SCHEMATIC DIAGRAM-6/12-C
To B DVD MODULE (FEP) CIRCUIT on SCHEMATIC DIAGRAM-2/1-D
To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/1-D
To B DVD MODULE (AUDIO DAC) CIRCUIT on SCHEMATIC DIAGRAM-6/12-C
To B DVD MODULE (VIDEO DAC) CIRCUIT on SCHEMATIC DIAGRAM-5/12-F
To B DVD MODULE (FEP) CIRCUIT on SCHEMATIC DIAGRAM-2/12-B
To B DVD MODULE (VIDEO DAC) CIRCUIT on SCHEMATIC DIAGRAM-5/1-G
IC6211 PST596JNR RESET
Q6215 UN5212TX RESET
IC6201 MN102H60GFD CPU
IC6223 C0JBAA000001 AND GATE
IC6222 C0JBAA000001 AND GATE
IC6221 C3EBGC000033 EE PROM
LB6202 VLP0155-T
LB6221 VLP0146-T
K6201 0Ω
1.5V P-P
0.2 μs. 0.5V/DIV.


IC6301
C3FBND000098
32M FLASH MEMORY
IC6221
C3EBGC000033
EE PROM
PS6201
TEST TERMINAL
LB6201
VLP0146-T
To B DVD MODULE (VIDEO DAC) CIRCUIT on SCHEMATIC DIAGRAM-5/1-C
To B DVD MODULE (AUDIO DAC) CIRCUIT on SCHEMATIC DIAGRAM-6/1-H
SCHEMATIC DIAGRAM-6/12-C
To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/1-E,F
To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/1-C,D
To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/1-D,E
To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/1-B,C

SL-DV290(EE,GN) DVD MODULE(CPU) CIRCUIT DIAGRAM

SCHEMATIC DIAGRAM-8

: POSITIVE VOLTAGE LINE
: AUDIO SIGNAL LINE
:SURROUND SP. SIGNAL LINE
:CENTER SP. SIGNAL LINE
:SUB WOOFER SIGNAL LINE

E LOADING MOTOR CIRCUIT

IC1
TA7291P
MOTOR DRIVE

C2 0.01
RM1 (LOADING MOTOR)
R1 1K
C1 16V100
D2 MTZJ4R7BTA
Q1 RVTDTC143EST
MOTOR DRIVE

F CLAMP SW CIRCUIT

S4 (CLAMP)
W2
D1 GP1S94 (POSITION SENSOR)

G BOTTOM SW CIRCUIT

S5 (BOTTOM)
W1

C MAIN CIRCUIT

Q304
2SB621ARSTA
PLUNGER DRIVE

Q305
UN521NTX
PLUNGER DRIVE

D301 MA111TX
R307 1K
R306 10K
D302 D303 D304
D302-304 RL1N4003N02
C305 0.01
PLUNGER
S2 (TRAY POSITION 2 DET.)
S1 (TRAY POSITION 1 DET.)
S3 (OP/ CL DET.)
CN1
CN3
R308 220
C401 6.3V47
C402 50V3.3
D401 MA111TX

D OPERATION CIRCUIT

D608 SML79455C
D601 SELS5923C (CINEMA)
D602 SELS5923C (DOUBLE RE-MASTER)
D603 (DISC5)
D604 (DISC4)
D605 (DISC3)
D606 (DISC2)
D607 (DISC1)
D603-607 LNJ301MPUJAD

C605 0.1
C601 100P
C604 100P
C603 100P
C602 100P
R603 100
R601 100
R604 100
R602 100

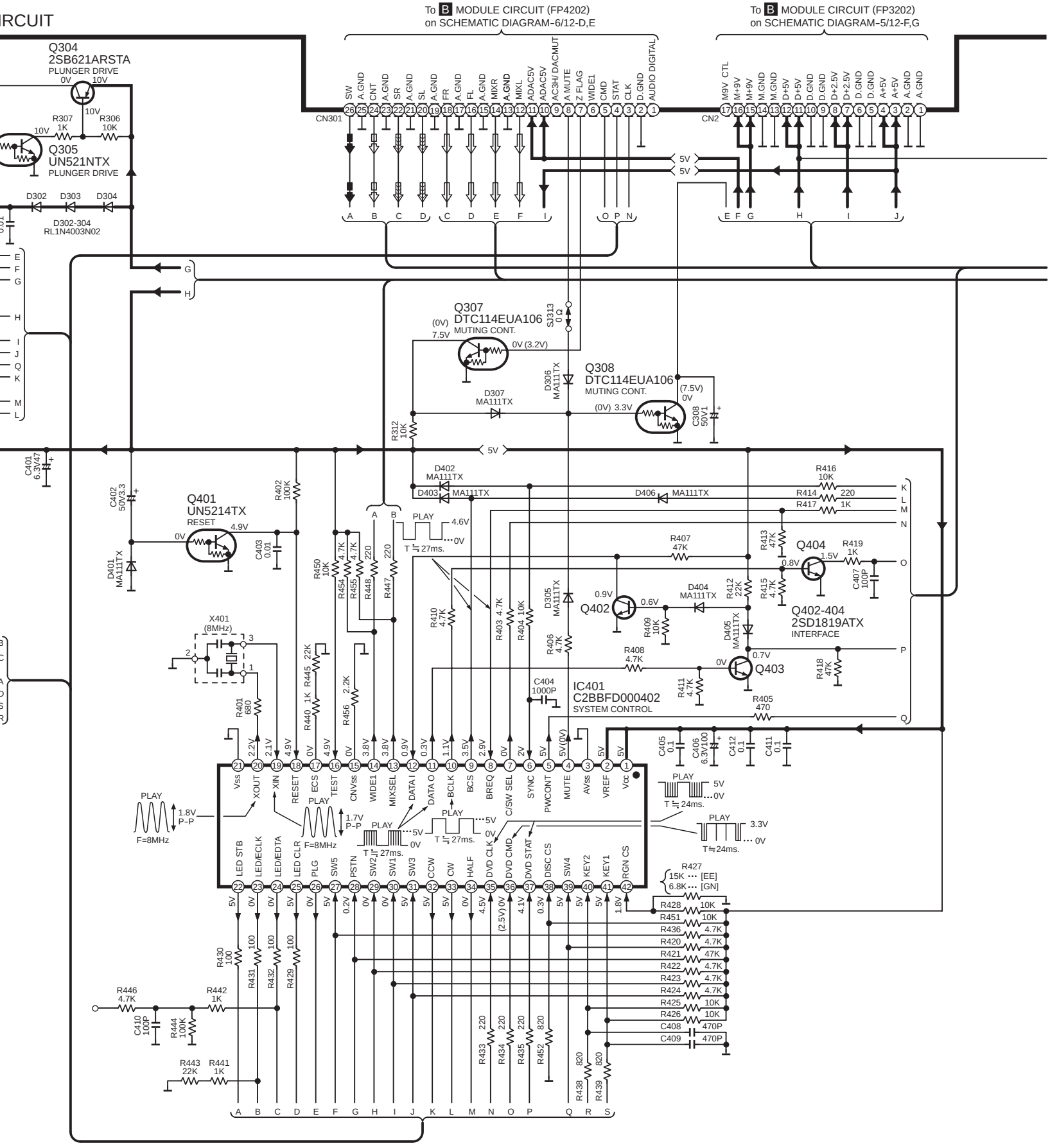
IC601
NJU3713GTE1
LED DRIVE

WB601
WA601

S612 (A-B REPEAT)
S613 (REPEAT)
S614 (CD EDIT)
S615 (CINEMA)
S616 (DOUBLE RE-MASTER)
S617 (II)
S618 (■)
S619 (▲)
S620 (▼)
S621 (▲)

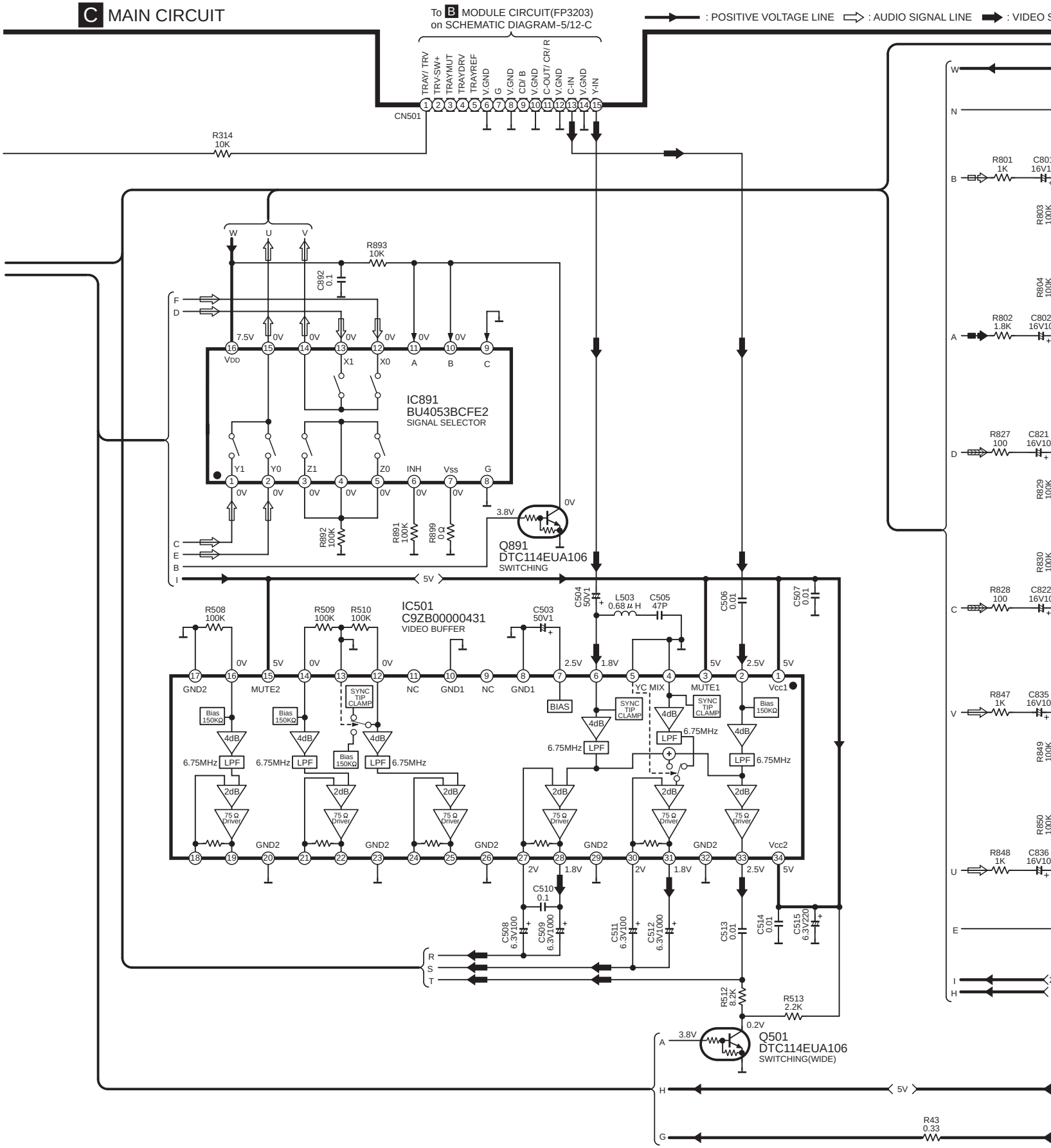
S601 (DISC5)
S602 (DISC4)
S603 (DISC3)
S604 (DISC2)
S605 (DISC1)
S606 (DISC1)
S607 (DISC2)
S608 (DISC3)
S609 (DISC4)
S610 (DISC5)
S611 (OPEN/CLOSE)
(DIRECT OPEN)

R446 4.7K
C410 100P


IRCUIT
To B MODULE CIRCUIT (FP4202)
on SCHEMATIC DIAGRAM-6/12-D,E
To B MODULE CIRCUIT (FP3202)
on SCHEMATIC DIAGRAM-5/12-F,G
CN301
CN2
Q304
2SB621ARSTA
PLUNGER DRIVE
Q305
UN521NTX
PLUNGER DRIVE
D302-304
RL1N4003N02
Q307
DTC114EUA106
MUTING CONT.
Q308
DTC114EUA106
MUTING CONT.
Q401
UN5214TX
RESET
Q402
Q403
Q404
Q402-404
2SD1819ATX
INTERFACE
IC401
C2BBFD000402
SYSTEM CONTROL
X401
(8MHz)
F=8MHz
PLAY
5V
0V
3.3V
1.8V
P-P
1.7V
P-P
T ≒ 27ms.
T ≒ 24ms.

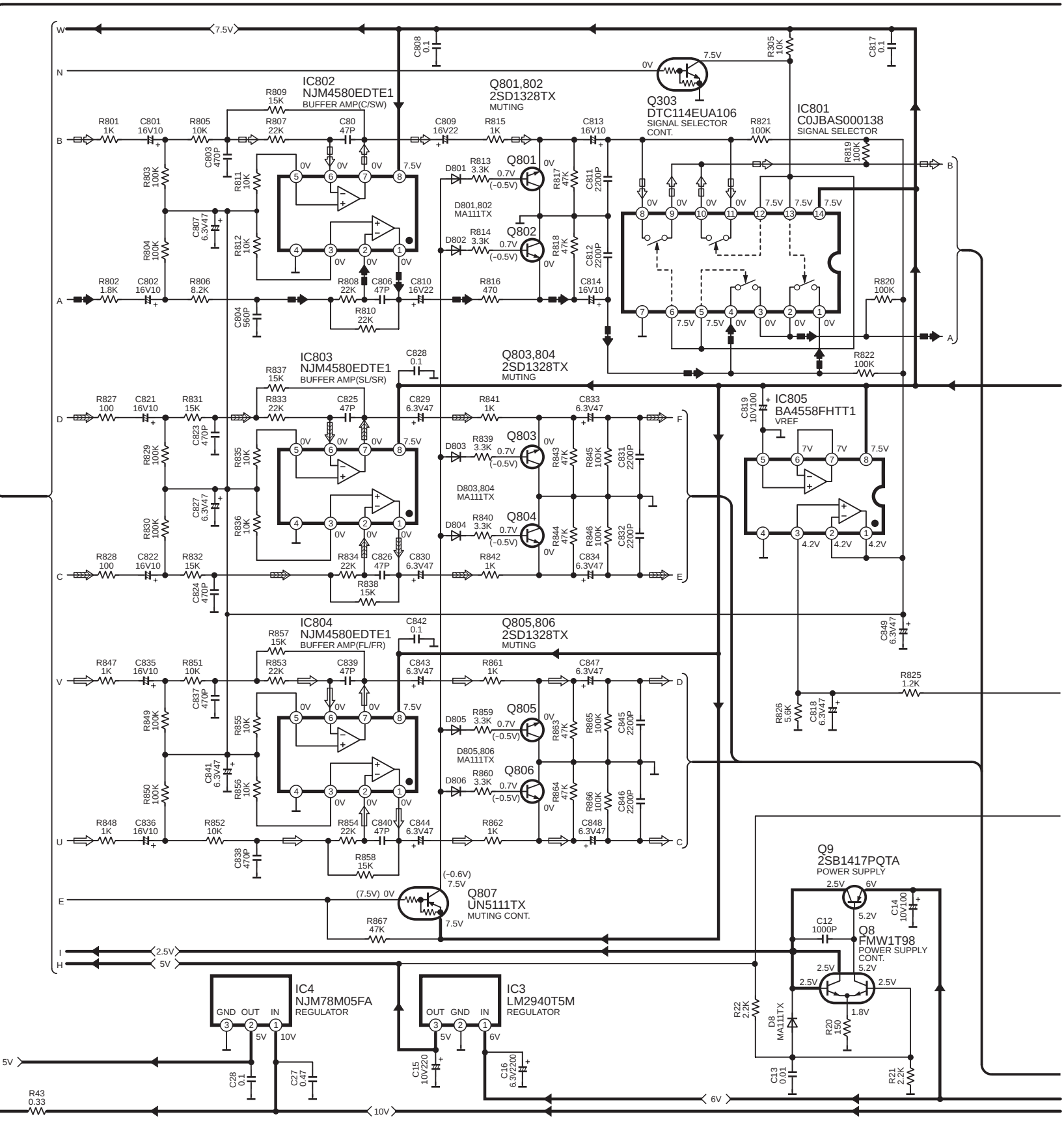
SCHEMATIC DIAGRAM–9

C MAIN CIRCUIT



13	14	15	16	17	18	19

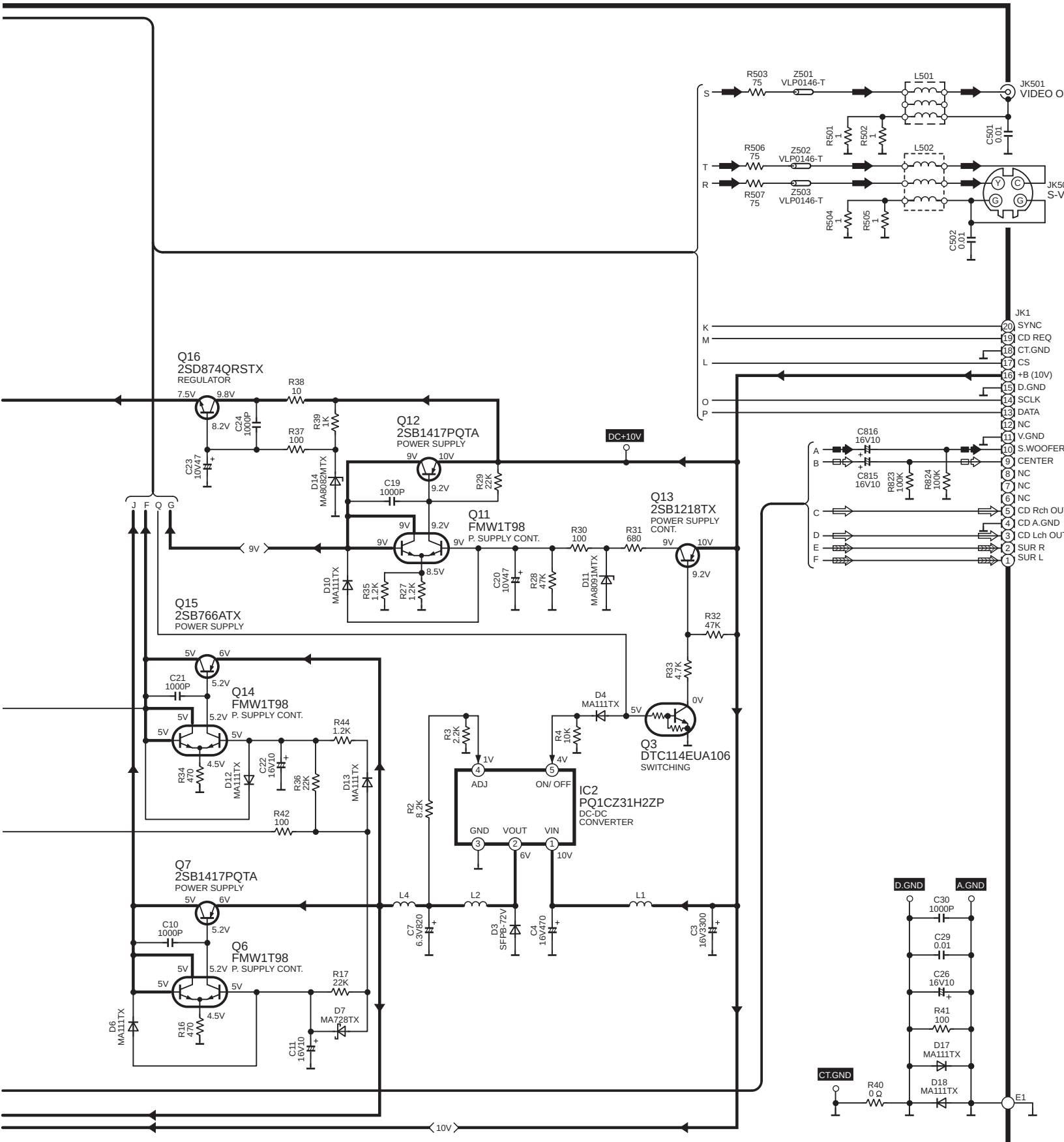
IO SIGNAL LINE : VIDEO SIGNAL LINE :SURROUND SP. SIGNAL LINE :CENTER SP. SIGNAL LINE :SUB WOOFER SIGNAL LINE



SCHEMATIC DIAGRAM-10

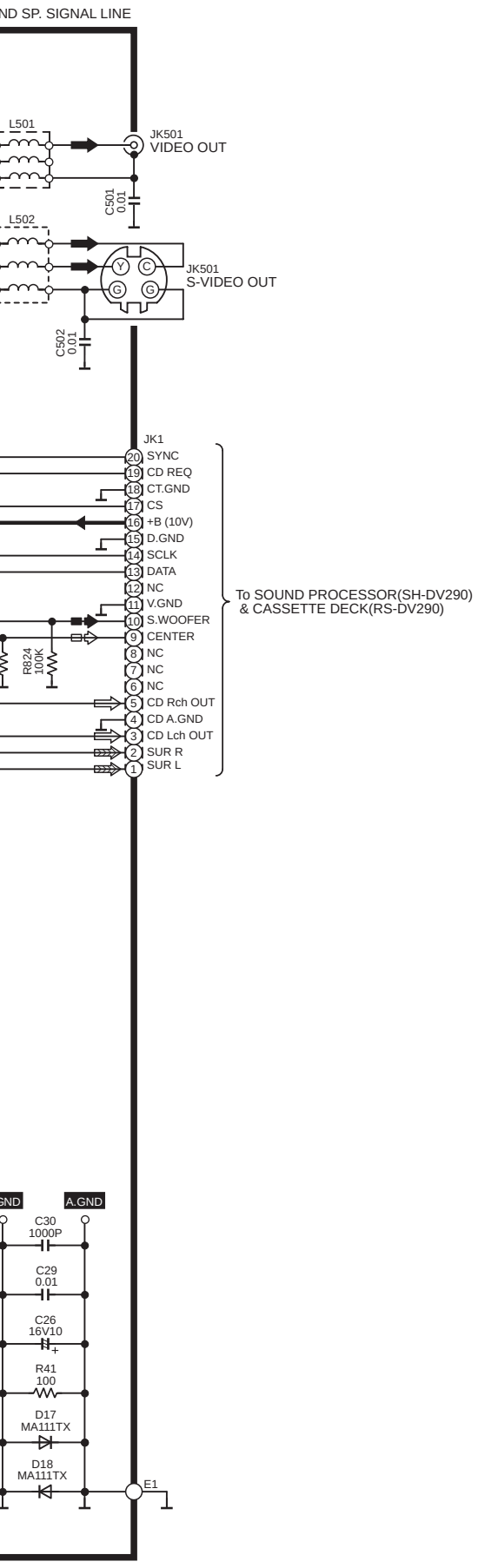
C MAIN CIRCUIT

: POSITIVE VOLTAGE LINE
: AUDIO SIGNAL LINE
: VIDEO SIGNAL LINE
:CENTER SP. SIGNAL LINE
:SUB WOOFER SIGNAL LINE
:SURROUND SP. SIGNAL LINE



SL-DV290(EE,GN) MAIN CIRCUIT DIAGRAM

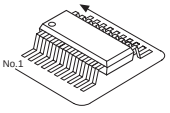
25	26	27	28	29	30



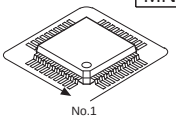
N CIRCUIT DIAGRAM

H G F E D C B A

30 31 32 33 34 35 36

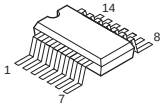


C1DB00000582	16PIN	C9ZB00000431	34PIN
C2BBFD000402	42PIN	BU4053BCFE2	16PIN
NJM4580EDTE1	8PIN	C3ABPG000121	54PIN
NJU3713GTE1	18PIN		

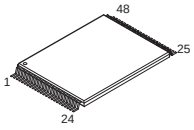


C0FBBK000036	48PIN	MN103S26EGA	176PIN
MN102H60GFD	100PIN	AN22030A-VT	64PIN
MN6775511	208PIN		

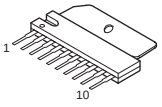
C0JBAS000138



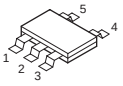
C3FBND000098



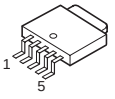
TA7291P



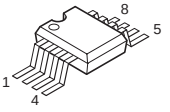
PST596JNR
C0JBAA000001
C0JBAS000116



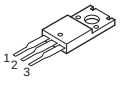
PQ1CZ31H2ZP
C0DBEZG00011
C0DBFFG00004
C0DBCGE00002



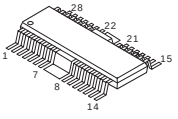
BA4558FHTT1
C3EBGC000033



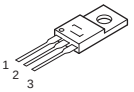
NJM78M05FA



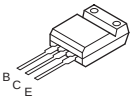
C0GBG0000033

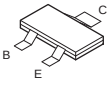


LM2940T5M



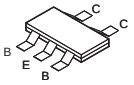
2SB1417PQTA



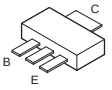


2SB1218TX UN2121-TX
2SD1328TX UN5111TX
2SD1819ATX UN5212TX
DTC114EUA106 UN5214TX
UN511MTX UN521NTX
UN5211TX

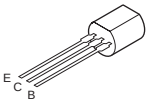
FMW1T98



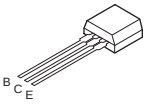
2SB1115-T
2SB766ATX
2SD874QRSTX



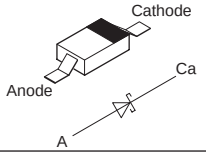
2SB621ARSTA



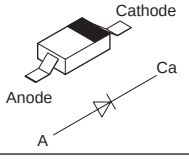
RVTDTC143EST



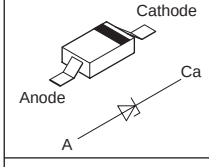
MA728TX



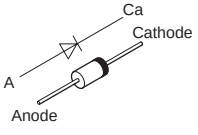
MA111TX
SFPB-72V



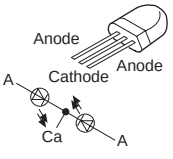
MA8082MTX
MA8091MTX



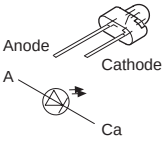
RL1N4003N02



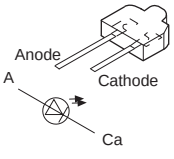
SML79455C



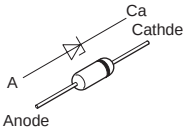
LNJ301MPUJAD



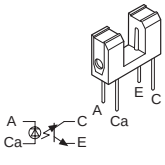
SELS5923C

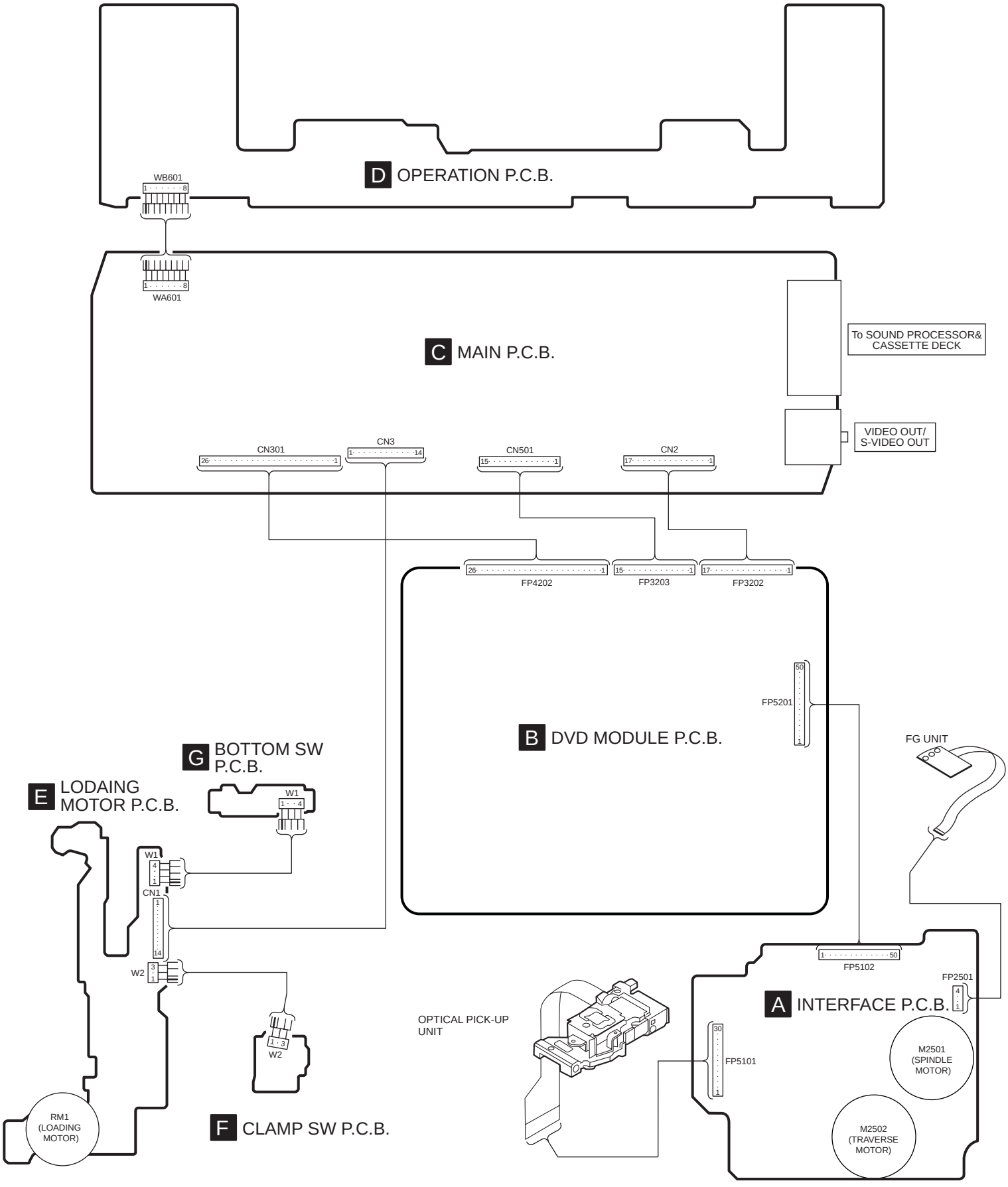


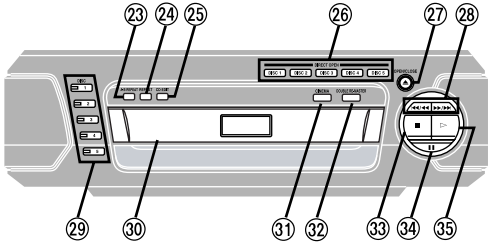
MTZJ4R7BTA



GP1S94




D OPERATION P.C.B.
WB601
WA601
C MAIN P.C.B.
To SOUND PROCESSOR& CASSETTE DECK
VIDEO OUT/ S-VIDEO OUT
CN301
CN3
CN501
CN2
FP4202
FP3203
FP3202
B DVD MODULE P.C.B.
FP5201
FG UNIT
G BOTTOM SW P.C.B.
E LODAING MOTOR P.C.B.
W1
CN1
W2
RM1 (LOADING MOTOR)
F CLAMP SW P.C.B.
OPTICAL PICK-UP UNIT
FP5102
FP2501
A INTERFACE P.C.B.
FP5101
M2501 (SPINDLE MOTOR)
M2502 (TRAVERSE MOTOR)



㉓ **A-B repeat button (A-B REPEAT)**
㉔ **Repeat play button (REPEAT)**
㉕ **CD edit button (CD EDIT)**
㉖ **Disc direct open buttons (DIRECT OPEN, DISC 1–DISC 5)**
㉗ **Disc tray open/close button (⏏, OPEN/CLOSE)**
㉘ **Skip/search buttons (|◀◀/◀◀, ▶▶/▶▶|)**
㉙ **Disc select buttons and indicators (DISC, 1–5)**
Green: Indicates that the tray is ready to play its disc or to be opened.
㉚ **Disc tray**
㉛ **Cinema mode button and indicator (CINEMA)**
㉜ **Double re-master button and indicator (DOUBLE RE-MASTER)**
㉝ **Stop button (■)**
㉞ **Pause button (❚❚)**
㉟ **Play button and indicator (▷)**
The colour of the indicator depends on the operation taking place.
If stopped: orange
If playing: green
If paused: flashes green
When the resume function is on: flashes orange

AN22030A-VT
IC5201
FRONT END PROCESSOR

OPTICAL PICK-UP UNIT

PHOTO DETECTOR
B1 B2 A1 A2 A4 A3 B4 B3
HEAD AMP

LASER DIODE
Q5111 LASER P.DRIVE
LASER DIODE
Q5115 LASER P.DRIVE
LPC AMP

A+5V
D5151
QR5221 POWER SUPPLY D+3.3V

MONI
MONI2
ADD
ADD
AMP
HPF COMP
EQ
DEFFERENTIAL PHASE DET.
NW DET.
LEVEL CONT.
FBAL
TBAL
HOLD
TE FLT
S LINE
L.P.F.
ENV DET.
DPDOFT DET.
MIRROR DET.
BDO DET.
AGC CONT.
FC CONT.
BOOST CONT.
EQ
VGA
GD CONT.
REG-LOGIC

57	MONI	48	PEAK
10	MONI2	12	RFTE
53	VIN7	49	RFENV
54	VIN8	9	TE FLT
58	VIN1	11	TE
59	VIN2	13	FS
60	VIN3	27	RSCL
61	VIN4	14	FE
51	VIN5	8	TBAL
52	VIN6	7	FBAL
62	VIN9	36	DCFLT
63	VIN10	22	BDO
2	LPCO1	34	FLTOP
1	LPC1	35	FLTON
4	LPCO2	37	SAG
3	LPC2	21	OFTR
44	CRFHP1	39	AGCG2
45	CRFHP2	38	AGCG1
46	RFINP	29	BDOSL
47	RFINN	30	MIRSL
43	TESTSG		
24	SHOLD		
41	SHORT		
23	DTRD		

42	IDGT	5	POFLT
17	STANBY	15	VHALF
19	SCK	55	VREF
18	SEN	32	RBCA
20	STDIO	56	VREFRF
		31	DCAGC
		64	GND
		28	GND2
		16	VSS
		50	VCC1
		33	VCC2
		25	VDD

Q2001 RF AMP A+5V
CRnet.

98	RFDIF
96	HPFIN
95	HPFOUT
92	LPFOUT
93	LPFIN
120	AD3
4,19,32, 60,77,81, 126,144, 155,163,170	VSS
118	AD1
119	AD2
117	AD0
65	TBAL
66	FBAL
85,94, 102,113	AVSS
52	BDO
111	ARF
110	NARF
51	OFTR
104	VREF2
75	IDGT
83	VFOSHORT
74	DTRD

Q5271 SWITCH-ING

C0JBAS000116
IC2101
LOGIC CONTROL

D2001 S2501 (REST DET.)

MN103S26EGA
IC2001
OPTICAL DISC CONTROL

61	PWM5	149,151,158,160, 164,166,168,172	HDD8~15
		3,31,57, 78,125,143, 156,162,169	VDD3 D+3.3V
		88,99, 109,116	AVDD D+3.3V
		174	VDDH D+3.3V
		67	TRSDRV
		106	VHALF
		18,76, 152	VDD18 D+1.8V
		68	SPDRV
		122	CAPAC2
		114	DAC0
		20,58	DRAMVDD18 D+1.8V
		33	DRAMVDD33 D+3.3V
		70	TIL TP
		71	TILT
		115	DAC1
		21	DRAMVSS
		47	NRST
		6	WAITODC
		69	FG
		56	PWM4
82	TSTSG		
53	PWM1		
54	PWM2		
55	PWM3		
9~17, 22~30	CPUADR0~17		
37~44	CPUDT0~7		
35	NWR		
36	NRD		
79	OSCI1		

NRST
WAIT

IDGT NRST FEPCLK FEPENB FEPDATA
VHALF VREF2
DCFLT
VREF2 IDGT VFOSHORT DTRD
TSTSG FEPDATA FEPCLK FEPENB
CPUADR0~17 CPUDT0~7 NWEL NRD CLK16M
HFMON

C0GBG0000033
IC2501
FOCUS/TRACKING
COIL,SPINDLE/TRAVERSE
MOTOR DRIVE

D+5V
M+9V
8 VCC
21 VCC
22 PREVCC

26 TRIN
1 BIAS1
23 VIN3
6 OPOUT
2 VIN1
24 LDIN
25 BIAS2
27 MUTE3
9 MUTE12
3 VIN2
28 LDCNT
7,10, 19 GND

CH3 MUTE
CH1,2 MUTE
LEVEL SHIFT

VO4+ 15
VO4- 16
OPIN+ 4
VO3+ 17
VO3- 18
OPIN- 5
VO1+ 14
VO1- 13
VO2+ 12
VO2- 11

M2502 (TRAVERSE MOTOR)
M2501 (SPINDLE MOTOR)
TRACKING COIL
FOCUS COIL
OPTICAL PICKUP UNIT

D+5V D+3.3V
VHALF

C0DBCGE00002
IC6253
D+5V → REGULATOR → D+3.3V

C0DBEZG00011
IC6251
D+2.5V → REGULATOR

C0DBFFG00004
IC6252
D+2.5V → REGULATOR → D+1.8V

C3ABPG000121
IC3061
MEMORY
D+3.3V 1,14,27 VDD

C3ABPG000121
IC3062
MEMORY
D+3.3V 3,9,43, 49, VDDQ

A0~11 ← 22~26, 29~35
DQ0~15 ← 2,4,5,7,8, 10,11,13,42, 44,45,47,48, 50,51,53
LDQM 15
/RAS 18
/CAS 17
/WE 16
/CS 19
CLK 38
VSS 28,41, 54
VSSQ 6,12, 46,52

FG UNIT
QR5241
POWER SUPPLY
D+3.3V

HFMON
DCFLT

C3EBGC000033
IC6221
EE PROM
D+3.3V → 8 VCC
4 GND
SDA 5
SCL 6

Q6215
RESET
NRST

67 RAS
12 NWORD

SBO4 56
SBT4 53
P56 11
NIRQ3 79
NIRQ2 78
LCAS 68
NWEH 4
NCS2 7
BOSC 18
NRE 2
NWEL 3
WAIT 1
SBT1 70
SBO1 72
SBI1 71
OSCI 23
EXTCK 100
NBRACK 10
D0~15 ← 84~91, 93~100
A0~21 ← 13~16, 26~33, 35~42, 44,45
NBREQ 9
SBI3 51

AV2IRQ
AV1IRQ
STBDAC2
NWEH
NAVCS
SYSCLK
NRD
NWEL
WAIT
SBT1
SBO1
SBI1
CLK33M
EXTCLK
CLKSEL
CPUDT0~15
CPUADR0~21
AMUT
DCMD
DCLK
DSTAT

MN102H60GFD
IC6201
CPU

VDD 17,22, 66,83 → D+3.3V
AVDD 34 → D+3.3V
VREF+ 54 → D+3.3V
VREF- 43
VSS 19,92
AVSS 61
NCS3 8
NRST 82

SBT3 50 → C0JBAA000001 IC6223 AND GATE
SBO3 52 → C0JBAA000001 IC6222 AND GATE

D+3.3V → RESET PST596JNR IC6211

MN6775511
IC3001
AV DECODER

81~88 STD0~7
5,15,26,39,52,58,66,75,89,103,131,144,152,157,165,175,184,194,203 VDD
12,30,48,69,98,127,135,172,186 LVDD
105 PLLAVDD
112,118 AVDD
176~179,181~183,189,191,192,196 MA0~11
2~4,6~9,11,13,14,16~18,150,151,153~155,158~160,162~164,166~169,171,205~207 MDQ0~31
174,204 DQM1,2
200 XRAS
201 XCAS
193 XWE
198 XCSM
185 MCKI
187 MCK

SRCK 96
LRCK 97
ADOUT0 91
ADOUT1 92
ADOUT2 93
ADOUT3 94
PLLVSS 107
113,121 AVSS
1,10,19,34,44,53,62,71,80,95,104,122,139,148,156,161,170,180,190,199,208 VSS
DAC5OUT 120
DAC4OUT 116
PCLK 102

XWRH 25
XDK 24
XHINT2 23
XHINT 22
XRST 21
VCLK 128
32,33,35~38,40~43,45~47,49~51,54 HA1~17
55~57,59~61,63~65,67,68,70,76,72~74 HD0~15
XCS 29
HCLK 31
XRD 28
XWR 27

NWEH
WAIT
AV2IRQ
AV1IRQ
NRST
CLK27M
CPUADR1~17
NAVCS
SYSCLK
NRD
NWEL

C0FBBK000036
IC4211
8CH AUDIO D/A CONVERTER

BCKIN 40
LRCIN 41
DIN1 45
DIN2 46
DIN3 47
DATA4 31
NRST 37 RSTB
STBDAC2 36 ML
SBT1 35 MC
SBO1 34 MDI
SBI1 33 MDO

SERIAL INPUT I/F
FUNCTION CONTROL I/F
OVERSAMPLING DIGITAL FILTER WITH FUNCTION CONTROLLER
ENHANCED MULTI-LEVEL DELTA-SIGMA MODULATOR
SYSTEM CLOCK MANAGER
SYSTEM CLOCK
ZERO DETECT
DAC
OUTPUT AMP AND LOW-PASS FILTER

VOUT1 (VOUT2) 14 (13)
VOUT3 (VOUT4) 12 (11)
VOUT6 9
VOUT5 10
VOUT7 (VOUT8) 16 (20)

SCLKI 38
ZFLG1~6 1~6
ZERO8 32
ZERO7 30
ZFLGA 48
VCC 18,22,24,26,28 ADAC5V
AGND 17,19,21,23,25,27
DGND 44
VDD 43 D+3.3V

BU4053BCFE2
IC891
SIGNAL SELECTOR
13(1) 14(15)
12(2) GND 8
7 VSS 3
4
5
+B2 16
SW CONT.
INH 6
A B C
11 10 9

Q891
SWITCH-ING
MIXSEL
ZFLAG

C9ZB00000431
IC501
VIDEO BUFFER
A+5V 15
MUTE2

YC-MIX 5
C IN 2 Bias 150kΩ 4dB LPF 6.75MHz 2dB 75Ω Driver C OUT 33
V IN 4 Sync tip clamp 4dB LPF 6.75MHz 2dB 75Ω Driver VOUT 31 VSAG 30
Y IN 6 Sync tip clamp 4dB LPF 6.75MHz 2dB 75Ω Y OUT 28 YSAG 27
CY IN 12 4dB LPF 6.75MHz 2dB 75Ω CY OUT 25 CYSAG 24
CLP 13 Sync tip clamp Bias 150kΩ
Cb IN 14 Bias 150kΩ 4dB LPF 6.75MHz 2dB 75Ω Cb OUT 22 Cb SAG 21
Cr IN 16 Bias 150kΩ 4dB LPF 6.75MHz 2dB 75Ω Cr OUT 19 Cr SAG 18

MUTE1 3 A+5V
Vcc1 1 A+5V
Vcc2 34 A+5V
GND1 8,10
GND2 17,20,23,26,29,32

S-VIDEO OUT
VIDEO OUT

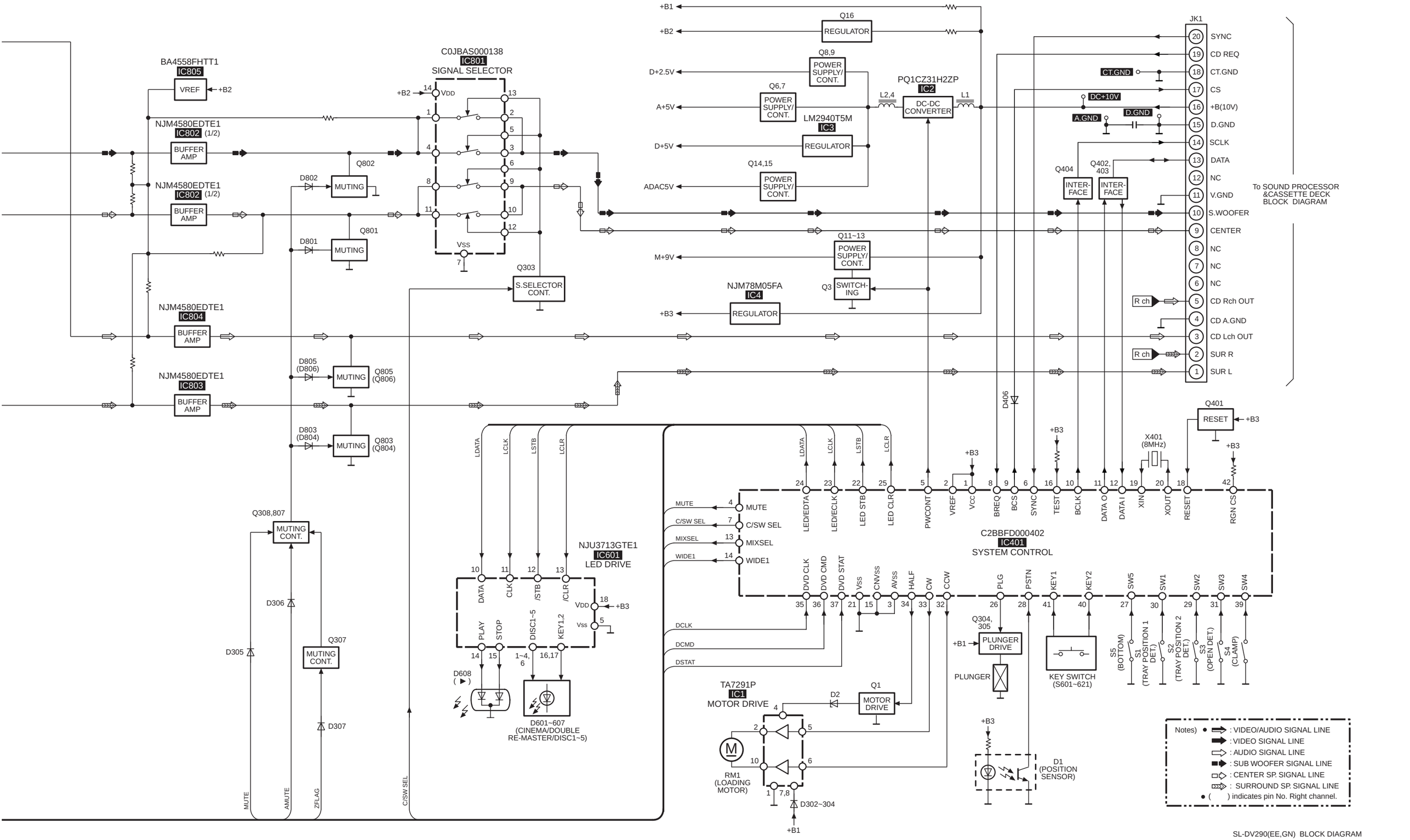
Q501
SWITCH-ING
WIDE1

C3FBND000098
IC6301
32M FLASH MEMORY

NRD
NWEL
CPUADR1~21
CPUDT0~15
11 XWE
28 XOE
47 XBYTE D+3.3V
12 XRESET
XCE 26
A0~20 1~10,16~25,48
DQ0~15 29~36,38~45
WP/ACC 14 D+3.3V
VDD 37 D+3.3V
VSS 27,46

C1DB00000582
IC6561
CLOCK GENERATOR

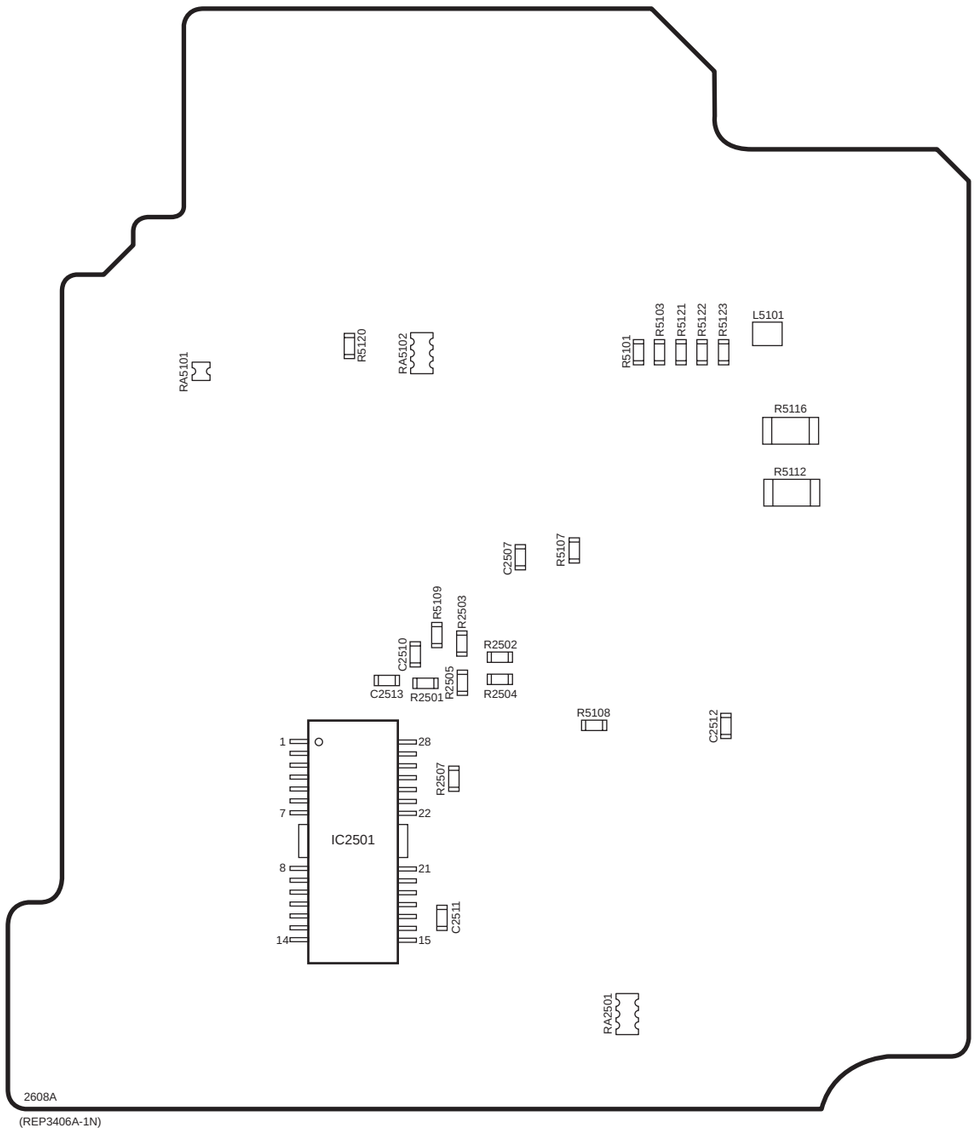
CLK54 3
CLK27 4
CLK16 13
FSEL 14
CLK33 15
768fs 10
EXTCLK
VDD1 1 D+3.3V
VDD2 5 D+3.3V
VDD3 12 D+3.3V
CE 16 D+3.3V
XTI 7
XTO 8
VSS1 2
VSS2 6
VSS3 11
X6561 (36.864MHz)



SL-DV290(EE,GN) BLOCK DIAGRAM

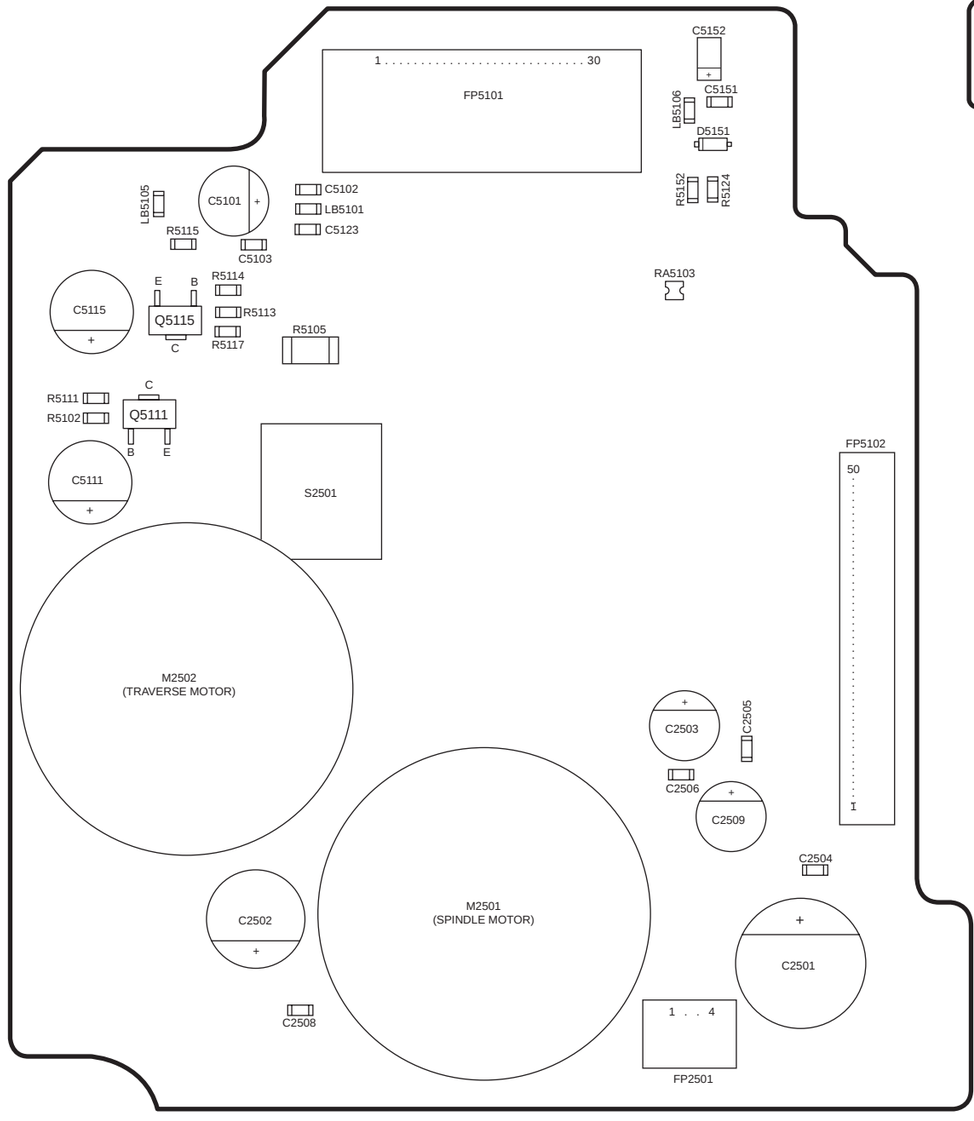
Note: This printed circuit board diagram may be modified at any time with the development of new technology.

A INTERFACE P.C.B. (SIDE : A)

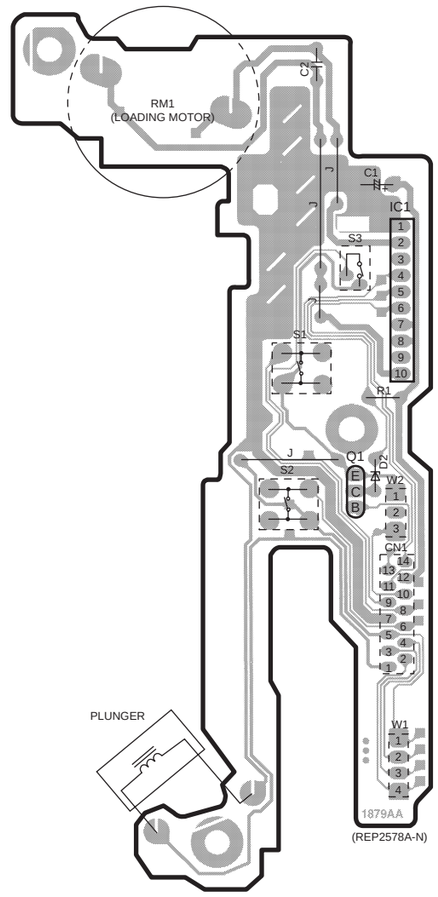


(REP3406A-1N)

A INTERFACE P.C.B. (SIDE : B)

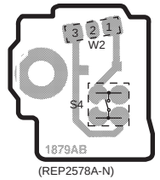


E LOADING MOTOR P.C.B.



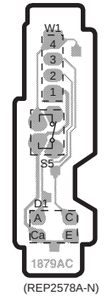
(REP2578A-N)

F CLAMP SW P.C.B.



(REP2578A-N)

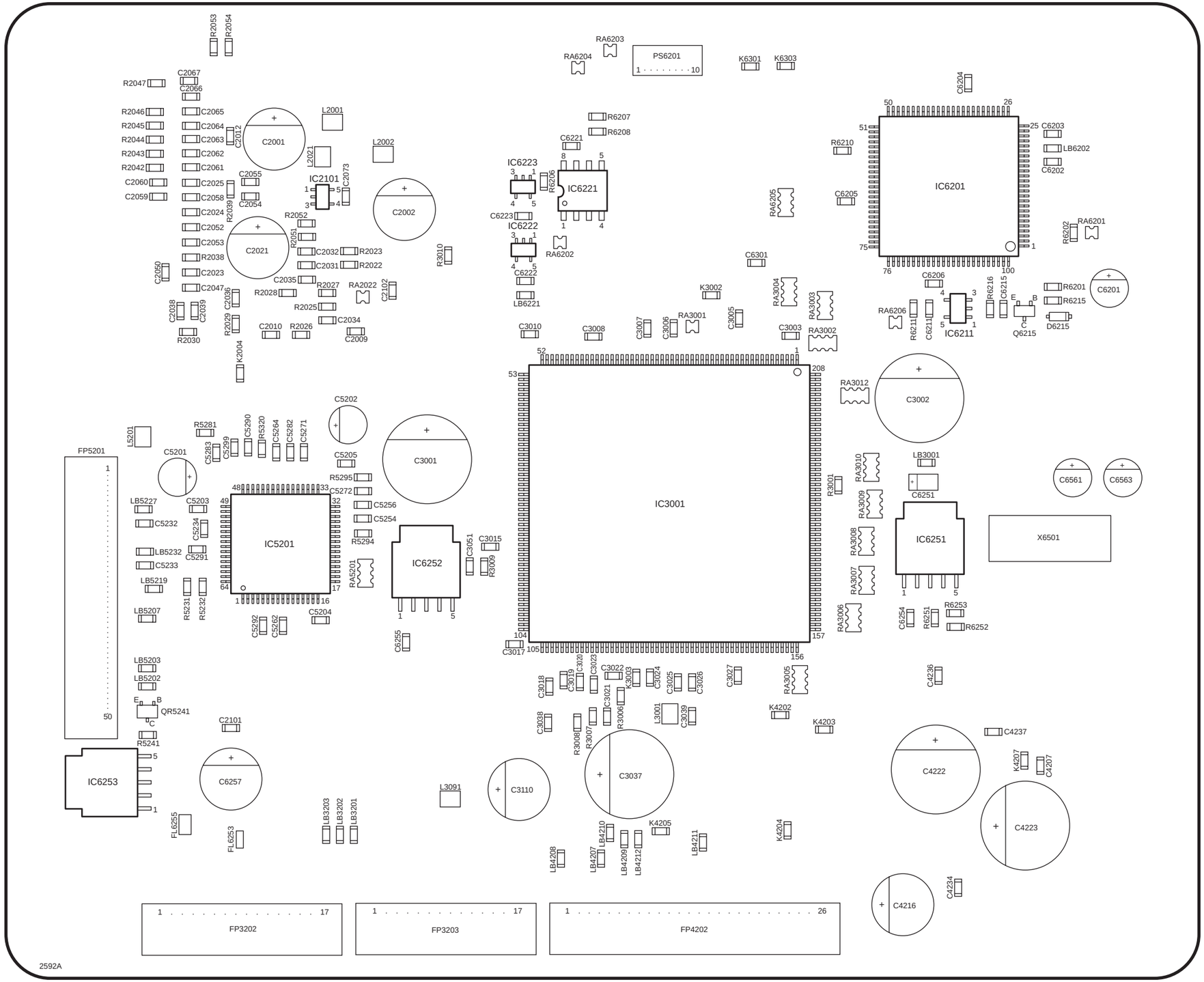
G BOTTOM SW P.C.B.



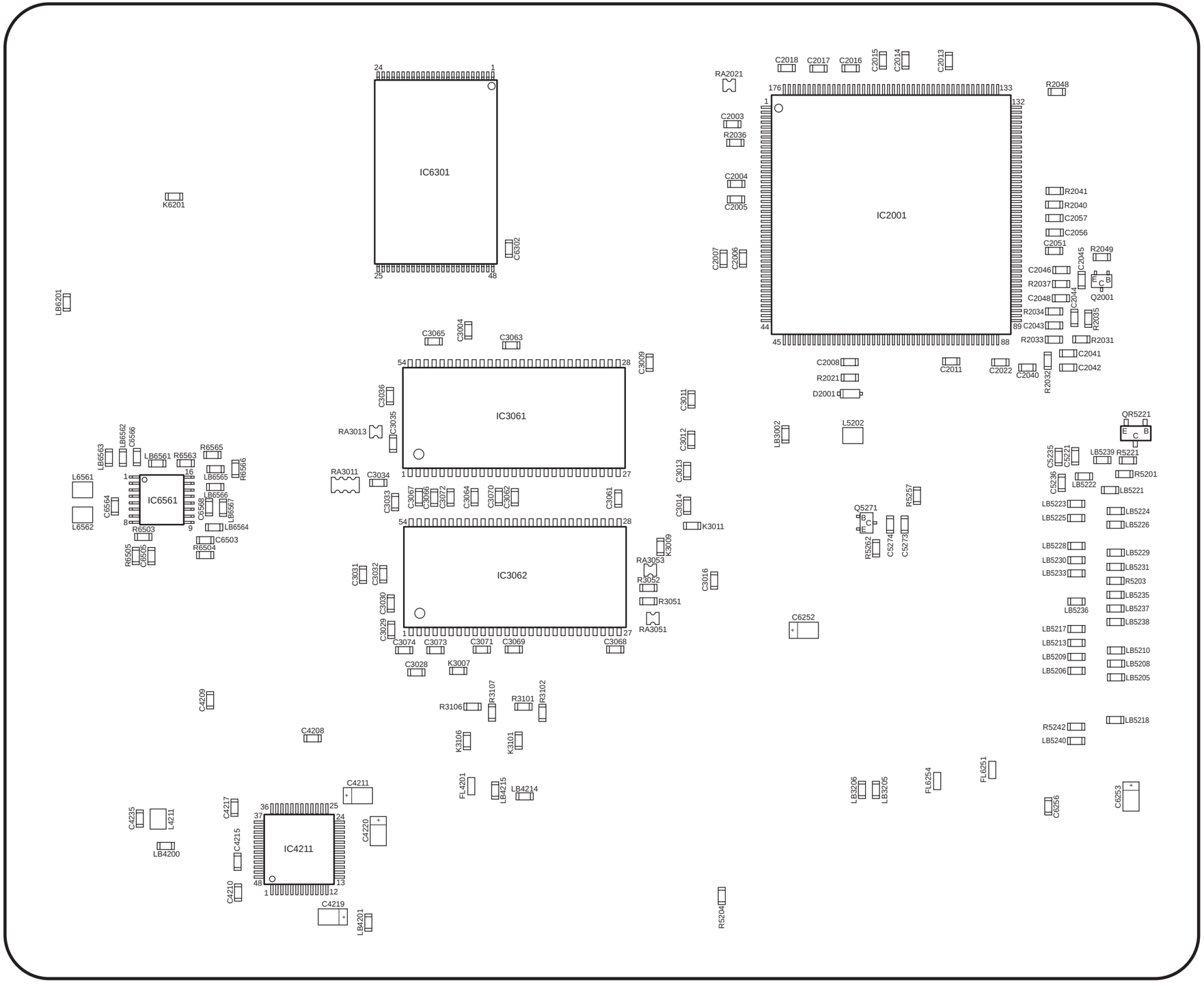
(REP2578A-N)

SL-DV290(EE,GN) INTERFACE,LOADING MOTOR,CLAMP SW,BOTTOM SW P.C.B.

B DVD MODULE P.C.B. (SIDE : A)

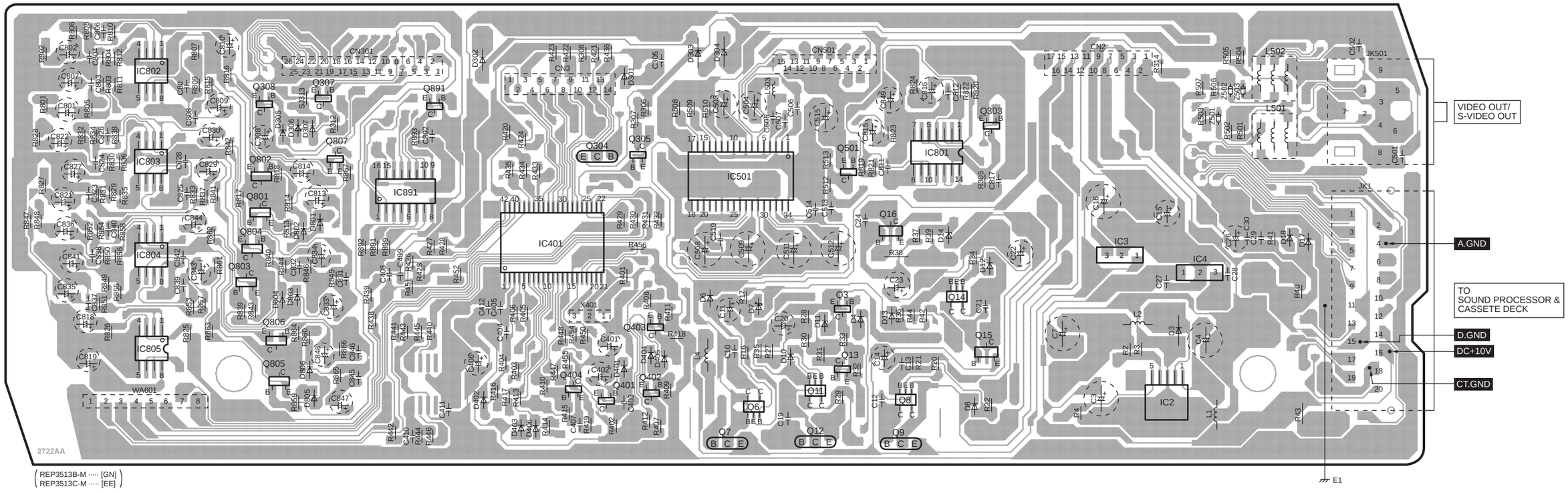


B DVD MODULE P.C.B. (SIDE : B)



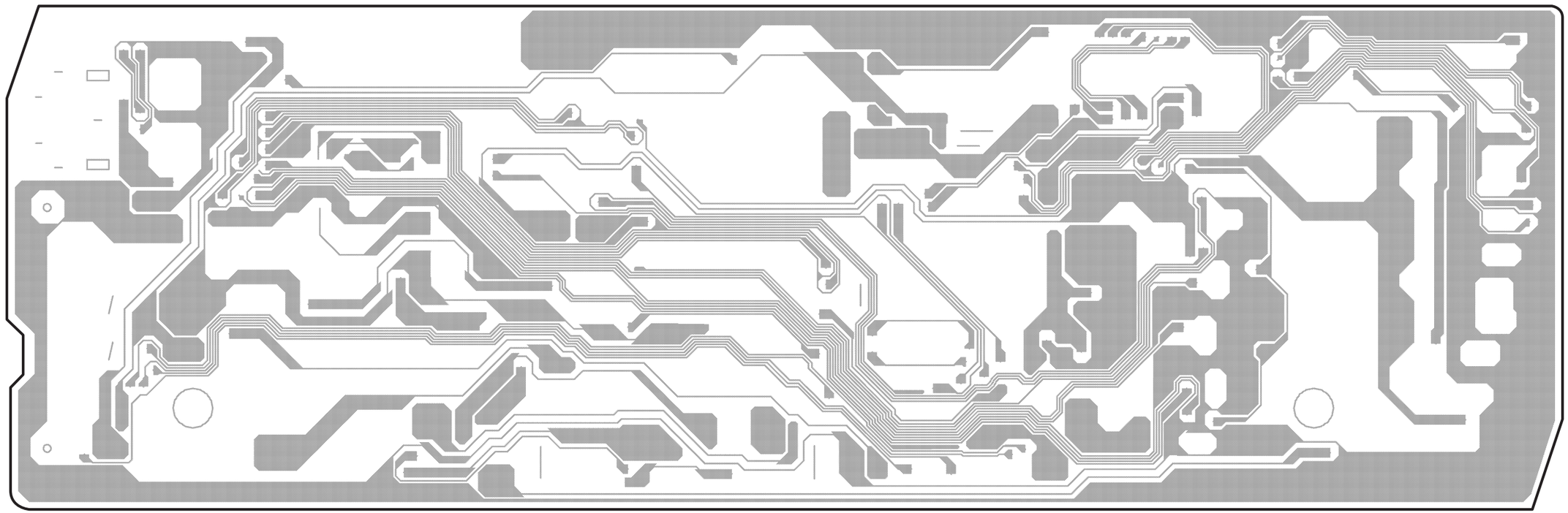
SL-DV290(EE,GN) DVD MODULE(SIDE: B) P.C.B.

C MAIN P.C.B. (SIDE : A)



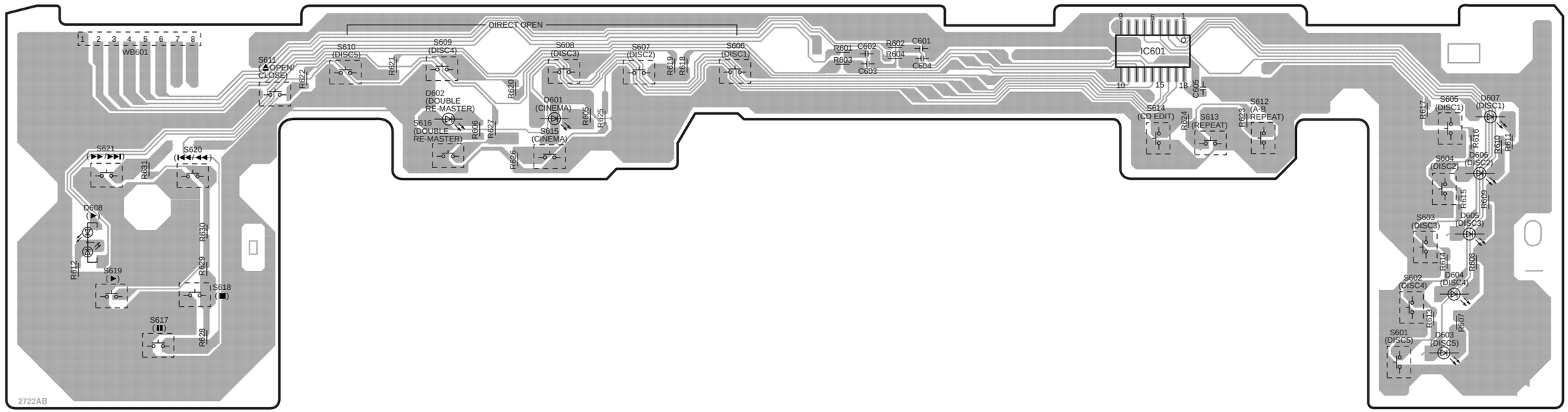
(REP3513B-M ····· [GN]
REP3513C-M ····· [EE])

C MAIN P.C.B. (SIDE :B)



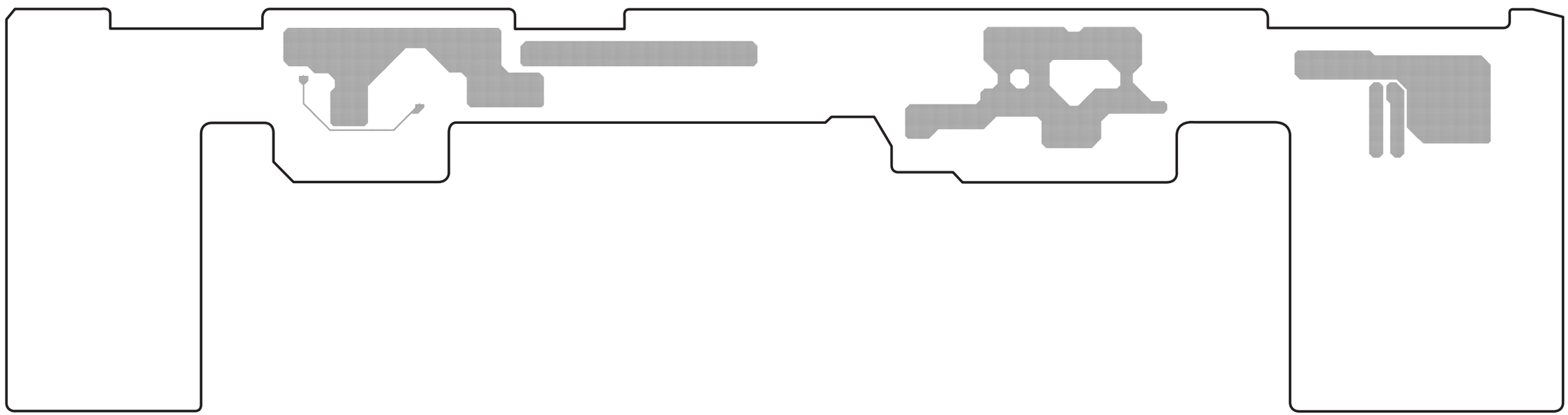
SL-DV290(EE,GN) MAIN P.C.B.

D OPERATION P.C.B. (SIDE : A)



(REP3513B-M ····· [GN]
REP3513C-M ····· [EE])

D OPERATION P.C.B. (SIDE : B)



SCHEMATIC DIAGRAM–1

NOTE:
The number which noted at the connectors on the schematic diagram as "SCHEMATIC DIAGRAM-1" or "SCHEMATIC DIAGRAM-2" indicates the schematic diagram serial number located on the left corner in the schematic diagram.

:POSITIVE VOLTAGE LINE :AUDIO/VIDEO SIGNAL LINE

A INTERFACE CIRCUIT

To FG UNIT — FP2501: FG3 1, FG2 2, FG2 3, FG1 4

M2502 (TRAVERSE MOTOR)

M2501 (SPINDLE MOTOR)

To OPTICAL PICK-UP UNIT — FP5101: T+ 30, F+ 29, F- 28, T- 27, 3.3VHFM 26, GND 25, LD+(DVD) 24, GND 23, GND 22, RFP 21, RFN 20, F1(DVD) 19, F2(DVD) 18, GAIN H/L 17, PIN(DVD) 16, VREF2.2V(DVD) 15, TA(DVD) 14, TD(DVD) 13, TC(DVD) 12, TB(DVD) 11, Vcc5V 10, FE1(CD) 9, GND 8, LD+(CD) 7, T1(CD) 6, VREF2.2V(CD) 5, FE2(CD) 4, T2(CD) 3, PIN(CD) 2, GND 1

IC2501
C0GBG0000033
FOCUS/TRACKING COIL, SPINDLE/ TRAVERSE MOTOR DRIVE

VO1+ VO1- VO2+ VO2- GND MUTE12 Vcc GND OPOUT OPIN- OPIN+ VIN2 VIN1 BIAS1
VO4+ VO4- VO3+ VO3- GND MUTE4 Vcc PREVcc VIN3 LDIN BIAS2 TRIN MUTE3 LDCNT

Q5111 2SB1115-T LASER POWER DRIVE(DVD)

Q5115 2SB1115-T LASER POWER DRIVE(CD)

LB5101 J0JHC0000045
LB5105 VLP0146-T
LB5106 VLP0146-T
D5151 MA728TX
L5101 10 μH
RA5101 56
RA5102_56
RA5103_56
RA2501 47K

FP5102

1	FG1	50	
2	FG3	49	
3	D.GND	48	
4	D.GND	47	
5	MUTE4	46	
6	D+5V	45	
7	D+5V	44	
8	TRAYIN	43	
9	M+9V	42	
10	M+9V	41	
11	M+9V	40	
12	M.GND	39	
13	M.GND	38	
14	M.GND	37	
15	TRAYREF	36	
16	MUTE12	35	
17	MUTE3	34	
18	DMV	33	
19	FOIN	32	
20	TRIN	31	
21	SPIN	30	
22	TRVIN	29	
23	IN-SW	28	
24	LDCUR	27	
25	VHALF	26	
26	A.GND	25	
27	PIN (CD)	24	
28	T2 (CD)	23	
29	FE2 (CD)	22	
30	T1 (CD)	21	
31	LPCO2	20	
32	A.GND	19	
33	FE1 (CD)	18	
34	Vcc 5V	17	
35	TB (DVD)	16	
36	TC (DVD)	15	
37	TD (DVD)	14	
38	TA (DVD)	13	
39	TRAY/TRV	12	
40	VREF2.2V	11	
41	PIN (DVD)	10	
42	GAIN H/L	9	
43	F2 (DVD)	8	
44	F1 (DVD)	7	
45	RFN	6	
46	RFP	5	
47	A.GND	4	
48	LPCO1	3	
49	A.GND	2	
50	3.3VHFM	1	

S2501 (REST DET.)

To B DVD MODULE (FEP) CIRCUIT(FP5201) on SCHEMATIC DIAGRAM-2/1,2-E~H

SL-DV290(EE,GN) INTERFACE CIRCUIT DIAGRAM

SCHEMATIC DIAGRAM–2

B DVD MODULE(FEP) CIRCUIT

:POSITIVE VOLTAGE LINE :AUDIO/VIDEO SIGNAL LINE

FP5201

FG1	50	
FG3	49	
D.GND	48	
D.GND	47	
MUTE4	46	
D+5V	45	
D+5V	44	
TRAYIN	43	
M+9V	42	
M+9V	41	
M+9V	40	
M.GND	39	
M.GND	38	
M.GND	37	
TRAYREF	36	
MUTE12	35	
MUTE3	34	
DMV	33	
FOIN	32	
TRIN	31	
SPDIN	30	
TRVIN	29	
INSW	28	
LDCUR	27	
VHALF	26	
A.GND	25	
PIN(CD)	24	
T2(CD)	23	
FE2(CD)	22	
T1(CD)	21	
LPCO2	20	
A.GND	19	
FE1(CD)	18	
Vcc+5V	17	
TB(DVD)	16	
TC(DVD)	15	
TD(DVD)	14	
TA(DVD)	13	
TRAY/TRV	12	
VREF2.2V	11	
PIN(DVD)	10	
GAIN H/L	9	
F2(DVD)	8	
F1(DVD)	7	
RFN	6	
RFP	5	
A.GND	4	
LPCO1	3	
A.GND	2	
3.3VHFM	1	

To A INTERFACE CIRCUIT(FP5102) on SCHEMATIC DIAGRAM–1/11,12-B–D

D1 D2 D3 D4 D5

LB5240 VLP0146-T
R5241 220
R5242 82K
LB5218 VLP0146-T
LB5202 J0JHC0000045
LB5203 J0JHC0000045
LB5205 VLP0146-T
LB5206 VLP0146-T
LB5207 VLP0146-T
LB5208 VLP0146-T
LB5209 VLP0146-T
LB5210 VLP0146-T
LB5213 VLP0146-T
LB5217 VLP0146-T
LB5219 VLP0146-T
LB5238 VLP0155-T
LB5237 VLP0155-T
LB5236 VLP0155-T
LB5235 VLP0155-T
R5203 0 Ω
LB5233 VLP0155-T
LB5231 VLP0155-T
LB5230 VLP0155-T
LB5229 VLP0155-T
LB5228 VLP0155-T
LB5226 VLP0155-T
LB5225 VLP0146-T
LB5224 VLP0155-T
LB5223 VLP0155-T
LB5222 VLP0155-T
LB5221 VLP0155-T
R5201 0 Ω

A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11

QR5241 UN511MTX POWER SUPPLY
0V (3.3V) 3.3V
3.3V (0V)

QR5221 UN2121-TX POWER SUPPLY
LB5239 VLP0146-T
R5221 0 Ω
(3.3V) 0V 3.3V
C5221 0.1
3.3V (0V)

B15 B12 B4 B11 B16 B3 B10 B9 B8 B7 B13 B6 B5 B2 B1 B14

C5233 0.1
R5204 1K
C5232 0.1
LB5232 VLP0146-T
LB5227 VLP0146-T
C5234 0.1
R5231 8.2K
R5232 8.2K
C5291 2700P

B12 B11 B10 B9 B8 B7 B6 B5 B4 B3 B2 B1

C5235 0.1
C5236 0.1

64 GND 2.3V
63 VIN10 2.3V
62 VIN9 2.3V
61 VIN4 2.3V
60 VIN3 2.3V
59 VIN2 2.3V
58 VIN1 2.3V
57 MONI 1.8V
56 VREFRF 2.2V
55 VREF 2.3V
54 VIN8 2.3V
53 VIN7 2.2V
52 VIN6 2.2V
51 VIN5 5V
50 Vcc1 1.7V
49 RFENV

C5283 560P
R5281 1M

B13	(0.5V)0V	1	LPC1
B14	(3.2V)5V	2	LPCO1
B15	0V	3	LPC2
B16	5V	4	LPCO2
	(1.4V)2.6V	5	POFLT
C5292 100P		6	NC1
	1.7V	7	FBAL
	1.7V	8	TBAL
C5262 180P	1.7V	9	TEFLT
	1.7V	10	MONI2
	0V	11	TE
	1.7V	12	RFTE
	1.7V	13	FS
	1.7V	14	FE
	1.7V	15	VHALF
		16	Vss

IC5201 AN22030A-VT FRONT END PROCESSOR

C5204 0.1

PEAK	48	1.7V	
RFINN	47	2.2V	
RFINP	46	2.2V	
CRFHP2	45	0V	C5299 330P
CRFHP1	44	0.7V	C5290 1000P
TESTSG	43	0V	
IDGT	42	0V	
SHORT	41	0V	
NC3	40		
AGCG2	39	0V	C5264 0.018
AGCG1	38	0.7V	C5282 0.01
SAG	37	1.1V	C5271 1000P
DCFLT	36	1.8V	
FLTON	35	1.6V	
FLTOP	34	1.6V	
Vcc2	33	3.3V	

R5320 0 Ω

STANBY	17	3.3V	
SEN	18	3.3V	
SCK	19	0V	
STDIO	20	0V	
OFTR	21	0V	
BDO	22	0V	
DTRD	23	3.3V	
SHOLD	24	0V	
Vdd	25	3.3V	
NC2	26		
RSCL	27	0.5V	
GND2	28	1.2V	
BDOSL	29	1.2V	
MIRSL	30	2V	
DCAGC	31	2V	
BRCA	32	1.2V	

RA5201 100
R5262 0 Ω
R5294 22K
C5254 390P
C5256 2200P
C5272 0.22
R5295 24K
C5205 0.1

C5273 1800P
C5274 0.1
Q5271 UN5211TX SWITCHING
0V 3.3V
C5202 16V10
L5202 10 μ H

L5201 10 μ H
C5201 1000 16V
C5203 0.1

C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11

To B DVD MODULE (CPU) CIRCUIT on SCHEMATIC DIAGRAM-7/1-E
FC1 HFMON

To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/1-C
FS38 FGENB A11

To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/1-B, 3/12-F, 3/12-A, 3/12-F
FS5 GAINH/L A10
FS8 FG A1
FS6 LDCUR A9
FS1 MUTE12 A2
FS2 MUTE3 A3
FS3 FODRV A5
FS10 TRDRV A6
FS11 SPDRV A7
FS12 TRVSDRV A8
FS44 DMV A4

To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/1-B, 3/1-A
FS14 TBAL C1
FS15 FBAL C2
FS16 DTRD C3
FS17 IDGT C4

To B DVD MODULE (CPU) CIRCUIT on SCHEMATIC DIAGRAM-7/1-H
FS18 NRST C5

To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/1-C, 3/12-F
FS19 FEPENB C6
FS20 FEPCLK C7
FS21 FEPDATA C8
FS23 TE C9
FS24 AS C10
FS25 FE C11

To B DVD MODULE (VIDEO DAC) CIRCUIT on SCHEMATIC DIAGRAM-5/12-A
D5 TRAY/ TRV VD10
D4 TRV-SW+ VD9
D1 MUTE4 VD8
D2 TRAY DRV VD7
D3 TRAY REF VD6

To B DVD MODULE (VIDEO DAC) CIRCUIT on SCHEMATIC DIAGRAM-5/1-G, 5/1-H, 5/1-F
D+5V DB3
D.GND DG1
M+9V MB1
M.GND MG1
A+5V AB1
A.GND AG1

To B DVD MODULE (VIDEO DAC) CIRCUIT on SCHEMATIC DIAGRAM-5/1-D
D+3.3V DB1
D.GND DG1

To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/12-D, 3/12-F
VHALF FS32
VREF2 FS33
RFENV FS27

To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/1-A
R5257 0 Ω
TSTSG FS26
VFOSHORT FS37

To B DVD MODULE (SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/12-F
NARF FS35
ARF FS36

To B DVD MODULE(CPU) CIRCUIT on SCHEMATIC DIAGRAM-7/1-B
DCFLT FC3

To B DVD MODULE(SODC) CIRCUIT on SCHEMATIC DIAGRAM-3/1-C, 3/12-D
BDO FS28
OFTR FS29
RFDIF FS31

SL-DV290(EE,GN) DVD MODULE(FEP) CIRCUIT DIAGRAM

H G F E D B C A

1 2 3 4 5 6 7 8 9 10 11 12

SCHEMATIC DIAGRAM–3

B DVD MODULE(SODC) CIRCUIT

:POSITIVE VOLTAGE LINE :AUDIO/VIDEO SIGNAL LINE

IC2001
MN103S26EGA
OPTICAL DISC CONTROL

IC2101
C0JBAS000116
LOGIC CONTROL

Q2001
2SD1819ATX
RF AMP

PLAY 0.3V P-P, 0.5 µs. 0.2V/DIV.

3.5V P-P, 0.5 µs. 1V/DIV.

To B DVD MODULE (VIDEO DAC) CIRCUIT on SCHEMATIC DIAGRAM-5/1-E: DB4 D+1.8V, DG1 D.GND

To B DVD MODULE (VIDEO DAC) CIRCUIT on SCHEMATIC DIAGRAM-5/1-D: DB1 D+3.3V, DG1 D.GND

To B DVD MODULE (CPU) CIRCUIT on SCHEMATIC DIAGRAM-7/1-G: SC32 ODCIRQ, SC31 ADSCIRQ

SCHEMATIC DIAGRAM-7/1-F: SC27 WAIT

To B DVD MODULE (CPU) CIRCUIT on SCHEMATIC DIAGRAM-7/12-E,F: SC26 CPUADR17, SC25 CPUADR16, SC24 CPUADR15, SC23 CPUADR14, SC22 CPUADR13, SC21 CPUADR12, SC20 CPUADR11, SC19 CPUADR10, SC18 CPUADR9, SC17 CPUADR8, SC16 CPUADR7, SC15 CPUADR6, SC14 CPUADR5, SC13 CPUADR4, SC12 CPUADR3, SC11 CPUADR2, SC10 CPUADR1, SC9 CPUADR0

To B DVD MODULE (CPU) CIRCUIT on SCHEMATIC DIAGRAM-7/1-F: SC30 NSODCCS, SC29 NWEL, SC28 NRD, SC8 CPUDT7, SC7 CPUDT6, SC6 CPUDT5, SC5 CPUDT4, SC4 CPUDT3, SC3 CPUDT2, SC2 CPUDT1, SC1 CPUDT0

SCHEMATIC DIAGRAM-7/12-B

SCHEMATIC DIAGRAM-7/1-H: FS18 NRST

To B DVD MODULE (FEP) CIRCUIT on SCHEMATIC DIAGRAM-2/12-A: FS29 OFTR, FS28 BDO, FS21 FEPDATA

SCHEMATIC DIAGRAM-2/1-A: FS20 FEPCLK, FS19 FEPENB

SCHEMATIC DIAGRAM-2/1-D: FS38 FGENB

To B DVD MODULE (VIDEO DAC) CIRCUIT on SCHEMATIC DIAGRAM-5/12-B: VD9 TRV-SW+

To B DVD MODULE (FEP) CIRCUIT on SCHEMATIC DIAGRAM-2/1-B: FS14 TBAL, FS15 FBAL

To B DVD MODULE (FEP) CIRCUIT on SCHEMATIC DIAGRAM-2/1-C: FS8 FG, FS5 GAINH/L

SCHEMATIC DIAGRAM-2/1-B: FS16 DTRD, FS17 IDGT

SCHEMATIC DIAGRAM-2/12-C: FS26 TSTSG, FS37 VFO SHORT

To B DVD MODULE (AUDIO DAC) CIRCUIT on SCHEMATIC DIAGRAM-6/12-C: SA1 CLK16M1

To B DVD MODULE (AVDEC) CIRCUIT on SCHEMATIC DIAGRAM-4/1-A: E1 STENABLE SD1, E2 STD0 SD2, E3 STD1 SD3, E4 STD2 SD4, E5 STD3 SD5, E6 STD4 SD6, E7 STD5 SD7, E8 STD6 SD8, E9 STD7 SD9, E10 STVALID SD10, E11 STCLK SD11

To B DVD MODULE (FEP) CIRCUIT on SCHEMATIC DIAGRAM-2/1-C: DMV FS44, LDCUR FS6

SCHEMATIC DIAGRAM-2/12-F: RFENV FS27, AS FS24

SCHEMATIC DIAGRAM-2/1-A: TE FS23, FE FS25

SCHEMATIC DIAGRAM-2/12-C: ARF FS36, NARF FS35

To B DVD MODULE (VIDEO DAC) CIRCUIT on SCHEMATIC DIAGRAM-5/1-F: A+5V AB1, A.GND AG1

To B DVD MODULE (FEP) CIRCUIT on SCHEMATIC DIAGRAM-2/12-A: RFDIF FS31

SCHEMATIC DIAGRAM-2/12-F: VHALF FS32, VREF2 FS33

To B DVD MODULE (FEP) CIRCUIT on SCHEMATIC DIAGRAM-2/1-C: FODRV FS3, TRDRV FS10, MUTE12 FS1, MUTE3 FS2, SPDRV FS11, TRVSDRV FS12

SL-DV290(EE,GN) DVD MODULE(SODC) CIRCUIT DIAGRAM